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From Schola to Cathedral.

THE book which has been published under this title,* by Professor Baldwin Brown, is one which many architects would perhaps be disposed to pass over with little notice; and certainly it belongs properly rather to the domain of history than art. The illustrations are few, and more in the way of explanatory diagrams, rather than architectural illustrations, in the strict sense of the word. There is nothing new to be learned from it in regard to architectural style and construction: regarded in such a light, it is essentially the book of an amateur; but it contains an attempt, made in a very interesting and suggestive manner, to trace the development of the architectural form of the Christian church from its first sources, and to give such continuity to the history as is possible at our present distance from the period of the founding of Christianity, and after the removal of so many of the outward and visible links of the chain of architectural evidence.

As long as we adhered to the easy and simple theory of the adoption by Christian congregations of the Roman basilica as their ready-made place of worship, which was a step, but only an incomplete step, towards the comprehension of the growth of Christian architecture, there was no obvious necessity to endeavour to trace out the origin of Christian architecture further back than this. We took up Christianity in the basilican church,—the majority of architectural students did so, at least,—without any perverse questionings as to how and where the Christian communities worshipped before they had attained to the numbers, the popular acceptance, the political immunity, which would allow of their carrying on their worship in a public manner and in great buildings. Professor Brown has endeavoured to go further back than this, and, in fact, to trace the Christian church almost from the "upper room furnished" of the New Testament narrative. The basilica theory, only partially to be accepted in any case, does not begin at the beginning. The history of Christian architecture," says the author in his preface, "can be traced in existing monuments as far back as the fourth century. We find it then already represented by imposing buildings, with a distinct plan and an elaborate system of decoration, presupposing a series of tentative efforts. The record of these efforts lies, however, beneath the surface. The monumental evidence of them is but slight, and it is only by a search into literary records that we can discern their form and character." The object of Professor Brown's study, therefore, is to bring together this literary material into a convenient shape for the general reader and the architectural student.

Some kind of customary meeting-places the early Christians must have had before they were in a condition to fill buildings of the scale of basilicas or basilican churches with their numbers. A practical suggestion as to the nature of these meeting-places Professor Brown thinks is to be derived from the probability that the early Christians adopted, to a great extent, the outward customs and habits of analogous Pagan associations contemporaneous with them, and that this course was even an indirect protection to them, as putting them in a position to share in the immunities granted by the Roman Government to other associations, Pagan, and therefore separate from our present point of view, but among which the Christians might be classed by political rulers, as merely one among many sects or associations. That this sort of classification was quite possible is indicated in the well-known letter of Pliny, referred to by Professor Brown, in which he mentions that some recreant Christians told him that they had ceased to join in the meetings of their brethren because he had issued an edict "forbidding the meeting of clubs and assemblies." If the Christian meetings were included in a prohibition of this kind, they would also share in any privileges granted for such meetings, by governors who did not care to discriminate between one sect and another, except as far as any supposed political danger was concerned.

That such meetings were not in private houses, the author points out, is evident from the expressions in the twenty-second and thirty-fourth verses of the eleventh chapter of the First Epistle to the Corinthians.* In what sort of buildings, then, did these meetings take place? It is here the author's *schola* comes into the argument. The Pagan colleges or clubs "had, as one of their institutions, a lodge or meeting room called *schola*, where they held their gatherings, and assembled for common meals, to which each member brought his share of provisions"; and in some such room he suggests the early Christians met on such occasions as those referred to by St. Paul. The next most natural step in the argument would be that if we can find the nature of the plan and arrangement of the *schola*, of which more records might be expected to be left, we are probably pretty near to the arrangement of the Christian meeting-room. The author digresses, however, for a considerable space, to suggest the probability of the smaller Jewish synagogues exercising some considerable influence on the form of the Christian meeting-room (especially citing the use of the word "synagogue" by St. James, in a passage evidently speaking of the place of worship,—"If there came into your synagogue a man with a gold ring," &c.), and it is not till after a good many pages that we are allowed to return to the *scholæ* and resume the thread of the argument. We will give the author's exposition of his view of them in his own words:—

"The *scholæ*, the name which survives in the Italian term *scuola*, for the lodge of a fraternity, belong to a class of public buildings not so important as temples, theatres, baths, or basilicas, but essential to the equipment of an ancient city. Official bodies of various kinds, from the Roman or the municipal senates downwards, had their places of business or deliberation, called *curiæ* or *scholæ*. The *curia* was the regular name for a senate-house, and the senate at Rome had its *curiæ*, though it held its meetings very commonly in temples, especially in the temple of Concord; the ancient divisions of the Roman people, too, the *curiæ* met in edifices called by the same name. Bodies of officials, like those who managed the public games, or the details of municipal affairs, had also their proper offices, which seem to have been called *curiæ* or *scholæ*, according to their greater or less importance. Thus a set of public clerks at Rome were located close to the Tabularium, in a row of chambers called the *Schola Xanta*, while the august priests of Mars, the Salii, had a *curia* upon the Palatine. At Ostia the semi-official guilds of officers and workmen about the port had their *scholæ*, and these have recently been brought to light,—some above the magazines of grain, and others in a portico on the Forum, divided for this purpose into sundry compartments, on the thresholds of which are inscribed the names of the guilds in occupation."*

Professor Brown gives as the best example of the form of these *scholæ* the plans of three small edifices standing side by side close to the Forum of Pompeii. Two of these, engraved from Overbeck's plans, show rectangular apartments, about one-third larger than their width, one of which has at the end a small apse with a square recess behind, the other a large semi-circular apse nearly the width of the plan. This latter is unquestionably the plan of a Christian basilican church in embryo, in a very simple form and without aisles; and if we are to accept it that this was a *schola*, the argument, as far as probability goes at least, is pretty complete. In speaking in a

* From Schola to Cathedral: a Study of Early Christian Architecture, and its Relation to the Life of the Church. By G. Baldwin Brown, M.A., Watson-Gordon Professor of Fine Art in the University of Edinburgh. Edinburgh: David Douglas. 1886.

* "Have ye not houses to eat and to drink in? . . . If any man hunger let him eat at home."

* Lanciani, in the *Athenæum*, July, 1880, and January, 1882.

later chapter of the actual basilica, however, the author seems too anxious to show that the apsidal addition was no essential portion of the type of building called a basilica by the Romans; and in referring to a partly obliterated plan of the Basilica Ulpia, as shown in the Capitoline plan, he even goes so far as to suggest that the large apse at one end is probably no part of the building, because not only is the double colonnade returned across the opening of the apse, but there is a third row of columns, making a triple colonnade here. We can hardly accept this view of the meaning of the Capitoline fragment. There were, of course, basilicæ without apses, but unquestionably the apse was a frequent adjunct; and the author seems disposed to go too far in emphasising the view that the basilica did not originate the type of the Christian church, and to be disposed to deny the considerable degree of resemblance and connexion between the Pagan and Christian plan in this respect. It is sufficient to have maintained, what indeed seems only a matter of common sense, that the Christian church in its earliest form, being necessarily a small and obscure building, must have had other antecedents than the large basilica type, and to have given a very probable and well worked out suggestion as to what class of buildings constituted these antecedents, without attempting to deprive the business basilica altogether of its apse. We will give, however, the author's own words as to his idea of the business basilica, as they show an interesting attempt to penetrate to the reality of the thing as it would appear to a contemporary Roman:—

"The basilica was nothing more than an ingenious arrangement of colonnades put together so as to form a commodious and well-lighted interior. Starting from a simple form of the covered portico, the favourite Greek building, we may trace the development of the basilica in the following manner:—

In the early days of the ancient republics, all the traffic and barter of a city, all the intercourse of burghers discussing politics or public news, all the legal disputations before magistrates, as well as many of the popular shows and amusements, went on in the public place, the Forum or the Agora. In a busy city it would be convenient to set apart certain spaces for the transaction of particular kinds of business, and the Roman bankers congregated about the Marsyas statue in the Forum, just as in our own day at Liverpool the 'Flags' accommodate the brokers of cotton. For further distinction from the common ground of the city, such a space might be surrounded by covered porticos, under which shelter from the weather could be obtained, while their roof supported a terrace, affording an agreeable and airy promenade. If the porticos were bounded on the outside by a wall, further privacy would be obtained, and the result would be something resembling in ground-plan the Royal Exchange of London. The roofing-over of the central space (which has now been carried out in the last-mentioned building) would be the last step necessary to change the portion of open pavement into a regular commodious building. The roofing of the central space imparts, however, at once a new architectural character to the edifice."

The further remarks which Professor Brown makes in regard to the architectural development of the basilican church, with its aisle and clearstory arrangement, are true enough and well put, and we are glad to see them in a work which is likely to be read by general readers, as well as by architectural students, but he is mistaken in thinking there is anything new in the idea that "it is more than possible that the Egyptian clearstory gave to the builders of the columned halls of Greece the first idea of that system of construction which was perfected in the magnificent Roman Basilica of Cæsar and of Trajan." To the architectural student this is a mere truism, not a new light.

The further remarks on Professor Brown's book on the Development of Gothic Architecture from Romanesque, on the Dome, and on Byzantine Architecture and its Spirit, form a readable *résumé* of generally-assumed truths in regard to these chapters of architectural history, with here and there a special idea, worth noting for its suggestiveness. The one or two diagrams of dome construction are not good or clear, but the remarks on the connexion which should exist between a domical covering and the plan of the building, and the criticism on domed buildings in which the plan gives no suggestion of a dome, we quite concur in. Some remarks on the characteristics of Byzantine art, its monotony and want of freshness, its extreme technical finish without plasticity or the feeling for modelling which is so apparent in all Greek work, are in a true spirit of criticism. We question the truth of the author's conclusions as to the æsthetic aspect of the dome. He sums up with the old dictum that the dome is inclusive in its impression on the mind; it "bars egress," and has no aspiration; and "Christianity does not speak through the domes of Byzantium, Rome, or London, but through the tower of Strasburg and the vault of Beauvais." This depends a little on what you take "Christianity" to mean, which we may not discuss here.

THE DOMESDAY COMMEMORATION.

IT was wise of the Royal Historical Society to take the opportunity presented by the eight hundredth anniversary of the completion of Domesday Book to give students of the Book, and of the period, an opportunity of contributing to the knowledge of the world on this subject. For it must be admitted that for the most part even intelligent people have a very vague idea of Domesday Book. Those, however, who visited the Public Record Office on Monday afternoon had an opportunity of realising its existence, for the two volumes of which it is formed were shown to the assembled visitors. According to the memorandum at the end of the work, the book was completed in 1086. Other authorities give the date of the completion in the two preceding years; but, whether this be so or not, the fact that 1086 is given as the date in the book itself was sufficient reason to make the present year a proper one in which to commemorate its anniversary. It has also to be borne in mind that the four northern counties of Northumberland, Cumberland, Westmoreland, and Durham were excluded from the Survey. They were, — perhaps it would be more proper to say,—not included because from their state at the time it was impossible to collect the required information. Various reasons have been given as to the cause of the compilation of Domesday. That it gave William the Conqueror a complete and exact knowledge of his dominions, of their occupants, and of the population of England seems to be quite reason enough to have induced a practical and arbitrary monarch to order the survey.

The extended character of the proceedings from Monday until Friday of the present week makes it impossible for us to do more than take passing notes of some of the proceedings. Passing over the able "popular lecture" by Canon Isaac Taylor, in the Hall of the Society of Arts on Monday evening, as well as that on the history of Domesday Book, which was delivered by Mr. Hubert Hall, of the Public Record Office, at the time of the exhibition of the book and other manuscripts, on the afternoon of Monday, we may note Mr. Stuart A. Moore's paper, which was read at the evening meeting on Tuesday, in Lincoln's Inn Hall. Although the writer called his paper the Study of Domesday, two critical points were brought out with great distinctness, each of which is of historical importance. The first was that Domesday was not a mere collection of surveys by measurement, but it was a great valuation and rate-book. While it gave William the knowledge of his dominions, to which we have already alluded, it was, in Mr. Moore's opinion, a kind of assessment. This led on to the more strictly general historical point, namely, that it was conceived in a spirit of perfect equity, that it was anything but a tyrannical measure, and that, on the contrary, it was undertaken with the intention that each person should not bear a greater burden than his means would allow, but that every man should carry public burdens equally. Mr. Moore suggested the making of a tabular analysis of Domesday, which, in his opinion, would add to its historical value, and show still further the fairness with which the assessment had been carried out.

As Mr. Moore also pointed out, Domesday is better understood at the present day than it was a couple of centuries after its compilation. It says a good deal for the capacity of the age that this should be the case, but it requires the hearing of a paper such as that of Mr. Moore, and an acquaintance with the minute labours of those who have made Domesday and other ancient records their study, to realise the scientific and accurate analysis which is laying open to the less skilled world these striking historical treasures. To the majority of persons technical papers such as those of Wednesday on wapentakes and land measures of Domesday are simply *caviare*. But it is to such papers as these that we are indebted for information which, when it is considered by the general historian, enables him to lay before us a picture of the past. It was the great merit of Mr. Moore's paper, to which we have alluded, that it combined the minuteness of the technical student with the broader work of the historian. Mr. Moore expressed a hope that the commemoration of the anniversary of Domesday might possibly be not long preceding the commencement of a Domesday of the nineteenth century which, for the purposes of land transfer and land reform, is as necessary as was the old Domesday for the purpose of William. But, as the lecturer pointed out, the modern Domesday must be one with the minutest plans, as the time had long gone by for mere verbal description. That such a new Domesday may be as efficiently worked up as that of the eleventh century we will hope, but it is not the least remarkable characteristic of this compilation that after the lapse of eight hundred years it is yet of legal value, and that from time to time when disputes on fisheries, on common rights, or on similar subjects arise, it is yet necessary to refer to Domesday.

NOTES.

THE communication from the Honorary Secretary of the Institute of Architects, which we print in another column, will probably settle, in the minds of all reasonable persons, the question of the *bona fides* of the body who have endeavoured to pose as the representatives of the highest interests of the architectural profession. The question of federation of the architectural profession, which is at present engaging the attention of the Institute, as well as other important questions relating to the status of architects, will certainly be best considered and taken in hand by the recognised representative body of the profession, and not by a self-constituted clique who have endeavoured to get the confidence of architects by means which it would be superfluous to characterise.

WE are asked to mention that at a special business meeting of the Leeds and Yorkshire Architectural Society, it was proposed by Mr. C. R. Chorley, F.R.I.B.A., seconded by Mr. J. N. Connon, F.R.I.B.A., and carried unanimously, that the following resolution be sent to the Royal Institute of British Architects and to various architectural societies: viz., that "The Leeds and Yorkshire Architectural Society (Incorporated) congratulates the Royal Institute of British Architects on the completion of its proposed New Charter, and repudiates in the strongest manner any share in the opposition to its adoption which is being threatened by a non-representative architectural society."

A FIRST step has been taken in the right direction towards an industrial Irish policy, by the appointment of a small committee to inquire into the ports and harbours, the arterial drainage, and the railway system of the country This is as it should be, for an inquiry of this kind must form the best of all bases upon which to found the more localised subjects of individual industries. Taking, for instance, the question of improved arterial drainage, Professor Tyndall has estimated that the tem-

perature of Ireland would be raised by about four degrees, if the ground were thoroughly drained; and this, it is scarcely necessary to say, would result in a marked improvement in the condition of agriculture, besides bringing about many possibilities of local industries. But, once taken in hand, it must be done thoroughly, not following the example of the Shannon Drainage Commission, which, some thirty years ago, spent nearly a million,—relieving the upper portions, but placing the lower districts in a much worse position than they were before. While on the subject of railways, a strict investigation should be made as to the feasibility of constructing new waterways, for which Ireland appears an almost virgin field. Generally speaking, the railway rates are excessive and prohibitory, sufficient of themselves to strangle a young industrial undertaking. The Midland Great Western Company has got possession of the Royal Canal, the most important in Ireland, and is perfectly unfettered as to the limit of its charges, and it is evident that the whole system wants a complete and thorough revision.

THE canal question is beginning to make itself heard with a persistance that bodes no good to the railway interest; and unless some radical changes are made in the tariff of rates by the latter, there can scarcely fail to arise a determined organisation for the revival of water carriage. A manufacturer living on the Grand Junction Canal complains that he undertook to deliver three or four hundred tons of heavy material at Nottingham by water for 5s. per ton; but in consequence of one section of the canal being purposely choked up by the railway company that owned it he had to bring all but fifty tons to London at a cost of 3s. per ton, and send it on by rail for 9s. 10d. more. Thus, the transit cost 12s. 10d. instead of 5s., while three weeks were consumed on the journey instead of seven days. The singular part of the dog-in-the-manger policy pursued by the railways is that, after buying up canals, in many cases for a long price, they not only make no use of them, but allow them to fall into utter neglect. For instance, the Cromford Canal, which cost 46,000*l.* and paid a dividend of eighteen per cent., was bought up by the Midland Railway for 220,000*l.*, on which sum it has naturally paid no dividend. The Leeds and Liverpool Canal paid a guaranteed dividend of sixteen per cent. until 1853, when it was leased for twenty-one years to a railway combination. During this time, the traffic fell off so that the company had to make up the balance of the dividend to the canal shareholders; but since 1874, when the lease lapsed, the canal recovered so that it paid a dividend of twenty-two per cent. There are plenty of similar cases to be found throughout the country; and one scarcely knows which is the most surprising, the grasping action of the railway companies, who are also canal owners, or the apathy with which freighters and traders have so long submitted without any effort to free themselves.

IN a letter to the *City Press*, Mr. J. Douglass Mathews says that the reference in the *Builder* of the 16th inst. (p. 579), to the formation of the new street through the Mint, Southwark, recalls to mind a suggestion made by him nearly seven years ago for obtaining improved communication between north and south, and north-west and south-east, by the greater use of Southwark Bridge. He says, and very truly, that the reason this bridge is so comparatively little used is the bad approach from the City side by the steep descent from Cannon-street and the rapid ascent from Thames-street. Queen-street being at right angles with the principal streets, there is no direct approach to the bridge from the west or north-west, which is the chief direction of the traffic. His suggestion was, and is, the formation of a spur street or viaduct, starting from the bridge, and spanning Thames-street, passing by the back of St. James's Church, Garlick-hill, and entering Cannon-street or Queen Victoria-street opposite the end of Knightrider-street. Since the suggestion was first made the District Railway has been extended, and some new buildings have been erected; but much of the property required is sold and of comparatively small value, and Mr. Mathews says that if the buildings now in course of erection where the street would emerge could be acquired before they are occupied, the improvement could be carried out for a moderate amount. The need of such an approach will be more than ever felt when the new street in Southwark is completed, as direct communication will then be obtained through Dover-street with the Kent-road. If the proposed approach be made, it would form a link in a continuous thoroughfare from the north-west (*viâ* the Angel, Islington), with the south-east (*viâ* St. George's Church, Borough) and south, *viâ* the Elephant and Castle; and especially if the street could be continued to the Post Office. It would materially lessen the traffic in this direction passing over London Bridge, and also reduce the ever-increasing danger in front of the Mansion House.

IN reference to the Barony Church competition, to which we referred in a Note last week, Messrs. Burnet, Son, & Campbell, the architects whose design has been selected, write to us to say that they did not send in a design from which the spire could be omitted if desired, but two designs, one with a spire and the other without, and that the latter, which came within the prescribed cost, has been selected. In the previous correspondence on the subject, however, a copy of which is in our hands, it appears obvious that Messrs. Burnet & Campbell's design was described in their report as one design, and the solicitors for the Committee even suggest, in a letter to Mr. Honeyman's solicitors, dated September 28th, that all the discussion could have been avoided if the selected architects "had prepared two descriptions instead of one, or by the use of the plural 'designs' instead of the singular 'design.'" This suggestion Messrs. Burnet & Campbell seem to be now practically adopting,—rather late in the day, as it seems to us.

THE last issue of the *Notizie degli Scavi di Antichità* (Rome) gives an interesting account of the Mithræum, or Temple of Mithra, recently discovered at Ostia. This Mithræum, the best preserved which so far is known to us, stands in close connexion with a private house, and from an inscription there found it is probable, though not certain, that the house belonged to L. Apuleius Marcellus. It appears that a partial and unscientific exploration of the site took place at the end of the last century, under Pius VI., and that then all movable antiquities were carried off. Fortunately the foundations of the building are quite undisturbed, and of these a sketch plan is given in the *Notizie*. Further, and still more important, a very curious series of mosaics, all in black on white ground, are intact. The building seems to have been a mass of mosaics; not only the pavements, but the walls, and even the seats of the worshippers, are covered with them. On the pavement the design consists of seven doors, corresponding to the seven degrees of initiation into the mystic cult (*i. e.* Corax, Coryphius, Perses, Leo, Heliodromus, Pater, Pater Patrum); to these is added a dagger, symbol of the familiar type of Mithras, the bull-slayer. Between the entrance-door and the front door of initiation a sort of well is sunk in the floor, in all probability a font for the baptism of the postulant. On the front side of the seats are the six planets, and on the seats themselves the twelve constellations, but neither planets nor constellations are in their usual order. At the end of each of the two rows of seats is a torch-carrying genius. The arrangement will be best understood by reference to the sketch plan in the *Notizie*.

WE pointed out some months ago that the genuineness of one of our finest antique heads in the British Museum (the Hera of Girgenti) had been impugned by Dr. Furtwängler, of Berlin, and we expressed our hope that the present keeper of Greek and Roman antiquities would have something to say in the matter. We are not disappointed. Mr. Murray is not the man to hang back when the dogs of war are let loose. Dr. Furtwängler gets as good as he gave, and some change into the bargain. The attack was made in the *Archäologische Zeitung*. As that periodical has lapsed Mr. Murray's defence appears in the *Römische Mittheilungen*. The defence is a simple one. It turns out that the portion of the back of the head on which Dr. Furtwängler bases the chief of his argument is simply a clumsy modern restoration. We are surprised that this should have escaped an observer usually so acute as Dr. Furtwängler. We are sincerely glad that the victory rests with our Museum. Had the head proved to be really a forgery a serious slur would have been cast on the critical faculty of our two best English archæologists. As it is, we flatter ourselves that the conceit *has* been for once taken out of "those Germans."

EACH week brings fresh good news from Epidauros. The last account (Δελτίον τῆς Ἑστίας, No. 507) reports the discovery of a large number of statues, terra-cottas, &c., the principal of which are to be promptly transported to Athens. Among them we may note seven statues of Asklepios, about half life-size, in excellent preservation; three statues of Hygieia; three statuettes of Athene in different attitudes; a small statue of Pan; one of Cybele; four statues, probably votive of youths, all about the same size; a terra-cotta statue of a nude youth, of extremely fine style; the torso of a Nike, winged. All these remains have been found in one part, *i.e.*, in the north-east corner of a dwelling-house near the great Ionic colonnade. The house, though not uniformly the statues, is of Roman times.

THE *Art Annual*, published by the proprietors of the *Art Journal*, is this year devoted to a monograph on the life and work of Mr. Alma Tadema, with numerous engravings, large and small. The large frontispiece, an etching by Mr. C. O. Murray, is a reproduction of "Sappho," one of the finest of the artist's works, a fine example of etching of the more highly-finished order, and full of light; but, with all our admiration for etching as a beautiful form of artistic work, it is not the best adapted to translate Mr. Tadema's painting. The figures in the picture are very successful, but it is impossible to represent in etching any idea of the peculiar texture and brilliancy of Mr. Tadema's favourite surfaces of marble.

THE lawn on the Buccleuch Estate, recently purchased by the Richmond Vestry, has just escaped a form of mutilation other than that of the construction of the towing-path through it, to which we have already alluded. It appears not to have been generally known that the adopted scheme of Mr. Melliss for the drainage of Richmond included the laying of a 16 inch iron pipe main sewer through the lawn; and, moreover, that the consent of the Duke of Buccleuch had been obtained to this being done. But it appears that Sir James W. Ellis has intimated that if the sewer is to be laid he will withdraw his offer of 6,000*l.* for the house, which he would utilise as a residence. Mr. Melliss, however, submitted an alternative and apparently less objectionable route for the sewer, along the Lower-road, but across the corners of the Richmond House grounds; and the extra cost, it seems, is comparatively trifling. Sir James, with every desire to promote the interests of the town, while not assenting to anything which would materially damage his prospective property, has approved of this alternative plan. The Vestry have by a large majority agreed to request the Main Drainage Joint Committee to instruct Mr. Melliss to alter his plans accordingly; and the famous lawn is not to be desecrated either by a sewer or a towing-path. The community generally who are interested in the purity of the River Thames will heartily endorse the remark of Sir James Ellis in his letter read to the Vestry, that the suggestion of converting the old sewer now in the lawn into a "storm over-flow" in connexion with the

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scheme cannot be accepted in the face of the prohibitory orders of the Thames Conservancy Board.

ALL architects (besides others) should look at Mr. Fulleylove's sketches from "Petrarch's Country," at the Gallery of the Fine Art Society. Mr. Fulleylove is a master of the pictorial treatment of ancient architecture, nor does he, in his attention to the texture and structure of masonry, let the feeling of the scene escape. The Roman bath at Nimes, with the Renaissance balustrades to set it off, seems a great favourite, and is painted from several points of view. Among others that may be specially mentioned are "The Proscenium Columns at Arles" (7,—repeated from another point of view in 57), the Roman Sepulchral Monument, St. Rémy (37); "Aigues Mortes" (46), with its round tower, desolate plain, and timber bridge abutting against great square masses of masonry; "Carcassonne" (47); "Arles: Arena, Sunset" (53). The whole are well worth looking at both from the architect's and the painter's point of view, and some of the drawings exhibit also fine free sketching in pencil and pen-and-ink.

THE collection of pictures at Messrs. Tooth & Sons' gallery, which opens to-day (Saturday), boasts an exceptionally good Meissonier, "Le Voyageur," a landscape (large for Meissonier) through which a horseman is plodding against a strong wind, his horse going heavily over the soft road. There is even less story in it than is usual with Meissonier, but perfect representation in the figure and action of man and horse. There are two very good specimens of the talent of M. de Blaas, "The Offer," and "Accepted" (5 and 7), and between them a very clever work in the hard flaring manner of M. Gallegos, the interior of Seville Cathedral at a religious "function," where the carved organ-case is a study in that class of work. A charming Edouard Frère (24), two good specimens of Mr. Halswelle's mannered but effective landscape-painting (140, 148), a rustic idyll by M. Lhermitte, "At the Spring" (113), various small works by Herr Heffner, a bright Venetian scene by Mr. Woods, and a good example of Mr. Vicat Cole's art (less mannered than usual), are among the contents of the gallery.

FROM a mass of correspondence which has appeared in the Liverpool *Daily Post* during the last week, it seems to us that, even allowing for possible exaggeration in some of the statements made, there has been something exceedingly wrong in the manner in which the award of medals has been carried on. Two or three high-class firms have entirely refused to accept the gold medals awarded, and stated that, in view of what had reached them as to the influences under which some of the awards were made, the medals were of no value in their eyes, either from an honorary or a commercial point of view. The moral of the matter seems to us to go further than the special case of the Liverpool exhibition. We have long been of the opinion (which we know is shared by some of the most respectable firms, who feel under a kind of necessity to be represented at these numerous and ever-increasing exhibitions), that this constant recurrence of exhibitions is only a nuisance to the best manufacturers, who have nothing to gain by it, and the constantly-repeated distribution of medals little better than a farce; and we are rather inclined to hope that the discredit which has been thrown on the Liverpool awards, whether altogether justifiable or not, may lead to some check being put on this endless repetition of exhibitions and shovelling broadcast of medals, which are chiefly coveted by those who most require them as an advertisement.

Mr. W. Emerson.—We have been requested to state that a rumour which has been circulated to the effect that Mr. William Emerson, the well-known architect, and one of the candidates selected to prepare drawings for the proposed cathedral at Liverpool, has accepted a lucrative appointment at the Cape, is entirely without foundation.

HANS HOLBEIN'S DECORATIVE WORK.

IT is more than probable that the title of this article will excite not a little curiosity in the minds of our readers; from many of them will come the remark, "Holbein! what decorative work did he do?" Even among those who are most familiar with the master's work, there will be many whose thoughts will turn naturally to a series of very rough designs for title-pages, and to the four well-known "alphabets," among which is the celebrated "Dance of Death." The initial I at the commencement of this article is taken from one of them; it is not very beautiful, nor is it a very meritorious piece of design, but we have used it for a purpose to which we shall hereafter refer. In addition, however, to the title-pages and alphabets, Hans Holbein executed a great number of designs of all sorts of the rarest beauty, of which there is hardly a trace in his early work; much less is there in the title-pages any foreshadowing of that mastery of decorative detail and principle which is the characteristic

Fig. 2.

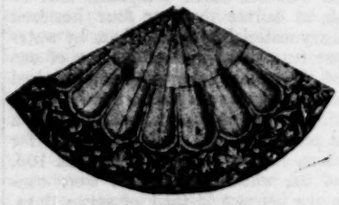


Fig. 1.

Fig. 4.

Fig. 3.

Fig. 5.

Fig. 6.

Fig. 7.

of the designs we propose to notice. In one of the Solander cases in the Print Room of the British Museum there is a collection of the original drawings for these designs as they left the master's hands. They came to the Museum direct from the Sloane Collection; but this is the only known fact in their history. The study of them will, however, form a fitting sequel to the studies we have already made of the decorative work of the early German engravers.

Apart from any question of merit or demerit, few decorative designs are so interesting as those which are the work of a great master of representative art. They are interesting as being the work of a master, but, for reasons which we do not think are far to seek, their demerits very frequently exceed their merits when they are judged by the strict rules of design. The canons of decorative and of representative art are, as we have already pointed out in our German studies, so essentially different: the painter rests so satisfied with the superiority of his own walk in art, that when, either for the accessories of some picture or for the sake of gratifying some passing fancy, he tries his hand at decoration, he is at little pains to shake himself free, even for the time being, from the trammels of his own genius; he refuses to inquire whether such things as principles exist for decoration, and he ruthlessly presses flowers and fruit and the most natural human figures into his composition. Judged, therefore, by the principles whose existence he has wilfully ignored, such work must frequently be condemned as bad: at the same time, it cannot fail to bear the impress of his genius, and often, in point of structure and for beauty of arrangement, it is far ahead of the work of a decorative artist pure and simple. When, however, the painter does condescend (if we may use the expression) to recognise the existence of art work which is governed by canons, differing from those on which his own representative art is based as light differs from darkness,—when he does give himself the trouble to appreciate those canons at their true value, and to realise their object,—then we may expect from him decorative work of the highest excellence, designs inspired by the same fancy, and marked by the same beauty as his work in the more exalted walk of art.

Such a condescension Hans Holbein showed, and such excellence, fancy, and beauty sprang from it.

All the drawings to which we are about to draw attention seem to have been executed during Holbein's residence in England, when he had secured the patronage of King Henry VIII. In the biographies he is described as having been a "king's servant" in 1537; and it was probably during this and the succeeding years of his service that these designs were made, doubtless, in the majority of cases, for the king himself. We must for the present, however, remain in ignorance as to where he studied the first principles of his new art. The existing records of his life are very far from voluminous or complete. So far as we have been able to study them they show no trace of his ever having been associated with any of the German engravers of whom we have spoken. In turning over the wood engravings of the title-pages, which were evidently designed before he left Germany, we are unable to trace the slightest influence upon him of the work of these masters. As designs, these woodcuts possess very little merit. The four alphabets were also drawn before he settled in England. Three of them are named, the "Dance of Death," the "Dance of Peasants," and the "Sports of Infants," after the subjects which form the backgrounds; the fourth is an attempt at simple decoration, and from it our initial I is taken. The "Dance of Death" is the best known of the four, and is much praised by the critics; the praise, however, is only deserved on account of the deftness and ingenuity of the draughtsmanship. The letters are about an inch square, and, in this small compass are portrayed with marvellous fidelity the various emotions with which the different persons, prince and peasant, sexton and abbot, receive the visits of the spectre, the bearer of the summons from the other world. But viewed, as an alphabet can only be viewed, as a piece of decorative design, they are of no merit whatever; the clever little pictures have no connexion with the letters, but simply form backgrounds to them; in many instances the figures do not even adapt themselves to the spaces left by the form of the letter; and it can only be said of them that the illustrations would be far more interesting were they not marred by the intrusion of the capitals. The same remarks apply to the "Dance of Peasants," and the "Sports of Infants." As to the more purely decorative

alphabet, the above initial I is perhaps the best of the series; but the ornament is uncouth, and the lines not very graceful. We have used it, however, for the sake of giving one example of Holbein's early decorative work, and in order to emphasise the great excellence of his English designs.

English decorative art was probably never purer than it was during the Tudor dynasty. Elizabethan decoration is, we think, the one of the many styles which have been in vogue in this country at different periods, which owed nothing to foreign influence. The simple principle of decoration, the use of lines for their own sake, has never been carried to such a pitch of excellence, and has never, except in the earliest forms of the art, been so severely

Fig. 9.

Fig. 10.

Fig. 8.

Fig. 11.

Fig. 12.

applied. Of all periods in architectural history this one alone stands out as English work *par excellence*. But during Henry VIII.'s reign the spirit of the Renaissance had reached England. The style of ornament peculiar to the Renaissance seems to have been adopted by many workmen, but it was adopted simply as it had been received, and left the characteristic Tudor ornament untouched; perhaps for the very good reason that the spirit was essentially one of purification, and in that ornament there was nothing to purify. Many of these designs of Holbein's are in the best style of the Renaissance; many are very finely-constructed arabesques, and some very few seem to "hark back," and remind one of Aldegrever's early work. It is impossible within the compass of this article to give sketches of more than a few of the choicest of these charming designs, the more charming as he who will may see the *ipsissima signa* of the master, and not an engraver's reproduction. It is, moreover, not very useful to write about designs unless some semblance of them in black and white is at hand to help description through; we have therefore made as varied a selection as possible, and we shall limit our remarks to those we have sketched. We would only have our readers remember that "more remain behind."

The first mount of drawings to which attention must be called is the one containing about eighteen or twenty small arabesques and Renaissance designs. We have reproduced four of the finest (figures 1, 2, 3, 4): the lens has taken in three smaller ones (figures 5, 6, 7), but they are too small in the reproduction to follow with ease; every drawing on the mount is well worth a careful study. The arabesques are noticeable for their great fidelity to the spirit of this form of design, both as to its essential purity and to its adaptability to the shape of the surface to be ornamented. In this latter respect, perhaps, our small figure 5 is the most remarkable, the two spherical triangles (this is a sufficiently accurate denomination) being filled in a very charming manner, the space being evenly covered from base to apex; the scrolls in both diminish gradually as they approach the apexes and at the same time lend themselves to the circular bend of the sides. Figures 2 and 4 are conceived in the same spirit and are of equal excellence. Our reproductions show how true and steady was the designer's hand; they are reduced to barely a third of the size of the originals, and in such small drawings the firmness of the lines is not the least remarkable feature; the bold and successful use which Holbein makes of angles, breaking abruptly the flow of the curves, a characteristic feature of the style, but which in less skilful hands so frequently disfigures arabesque devices, speaks of the care which he must have devoted to the study of the best examples of this graceful style. Figs. 1 and 3 show with what equal facility he worked in Renaissance ornament. Whenever he adopts it, he invariably yields to its best spirit. In the whole series, which contains a considerable amount of Renaissance work, he has not once adopted the base and ungainly realistic devices which so frequently disfigure it. When he uses the human or animal forms, they are nearly always as conventionalised as it is possible to make them, and they lend themselves without the slightest jar to the harmony of the whole. Then if we look for a recognition of the tangential principle on which all scrollwork must be based, there is never a blemish to be found. His fancy is made strictly dependent upon it, and at the same time the strict rule is lost entirely in the play of his fancy. Note especially, in fig. 1, how charmingly the scroll returns upon itself, and, bursting into foliage and flower, fills up the space it had left vacant in its first volution. The work contained on this one mount is almost sufficient to establish a man's claim to be in the first rank of designers. Space forbids us, however, to dwell longer upon it. In leaving it, we would only add that a student of decorative art need go no further than the dozen designs contained upon it to seek a better study and inspiration for his own work, or to find a clearer exposition of the fundamental principles of ornamentation.

In figures 8 and 9 we have some specimens of designs for bookbinding; the arabesque borders in the former being very graceful and original. To show to what small uses this great genius was put during his king's service, and how well he acquitted himself of the smallest task he undertook, the complicated monogram in the centre of figure 8 should be noticed. We add another example (fig. 10) of this style of work, a monogram evidently devised for the back of a watch or locket. Figures 11 and 12 are two more designs for a similar purpose; in the first he has thrown on one side both Arabesque and Renaissance inspiration, and has gone straight to nature; his mastery over scroll-work is noticeable in both the borders, but the thorny rose strikes us as too natural, whereas the aster is rigidly conventionalised. The two legends are "*Trinitatis gloria stabilimur*," and "*Origo mundi melioris*." In the centres are sketched, just as slightly as we have reproduced them, two little pictures in the manner of the alphabet backgrounds; that in fig. 12 evidently being borrowed from one of the "Dance of Death" letters. This one, however, seems not to have given satisfaction to his royal master or mistress (Catharine of Arragon), and it has been erased with the pen.*

CHANGES IN ST. GEORGE'S PARISH, SOUTHWARK.

We recently adverted† to two schemes which have just been set on foot for improvements in Southwark,—the one for a new thoroughfare from Blackman-street to Southwark Bridge-road; the other for converting an old burial-ground into an ornamental garden, promoted by the Metropolitan Public Gardens Association. That burial-ground is none other than the graveyard occupying the site, in part, of the hospital which, dedicated to St. Leonard and St. Mary, was commonly known as Le Loke's, or the Lock. Lying without St. George's Bar, but just within the eastern slip, as readjusted, of St. George's parish, the hospital stood at the upper end of what is now the Old Kent-road, just south of the Bull Tavern (No. 2, Old Kent-road). At the lower end of Tabard (*olim* Kent) street, beneath the roadway, at a spot between Edwards the chemist's shop (No. 302) and J. Goldsworthy the baker's (No. 285), and at the return of the parish bounds, lay, and perhaps still lies, Lock's Bridge, of which presently.

We read in Stow:—"Then in Kent-street is a lazar-house for leprous people, called the Loke in Southwarke." He goes on to say, "the foundation whereof I know not." The 'spital

* To be continued.

† *Builder*, pp. 548 and 579, *ante* (October 16, 1886).

was one of several like thereto which formerly existed in London, as at Kingsland, Stratford-le-Bow, Grosvenor-place, and Knightsbridge, together with those of St. James, Westminster, and St. Giles-in-the-Fields.* There is record that one John Pope bequeathed an annual rent of 6s. 8d. to the Governors in 1437; yet the foundation dates from Edward II.'s reign, if not an earlier period. John Pope may have been ancestor to the Sir Thomas Pope, founder of Trinity (*olim* Durham) College, Oxford, who made him a lordly mansion from out of the dissolved Bermondsey Priory. It subsequently passed to St. Bartholomew's Hospital and received some of the patients. Curiously enough, the chapel of Kingsland Lock was dedicated to St. Bartholomew, where the sundial bore the significant motto, "Post Voluptatem Misericordia." Falling into decay, the Southwark Lock was let out in tenements and finally removed in 1809, when they made the new road, Great Dover-street, from High-street, Borough, parallel with the then Kent-street. Most of the site was thrown into an adjoining paupsrs' burial-ground. Along the western side, in Buckenham-square, was erected about thirty years ago the Pilgrim church or hall, "formed 1592," *teste* the inscription; a memorial to those martyrs whose designation it bears, and whose church dates from 1616. Aubrey refers to the fragmentary inscription above the Lock chapel door. In Wilkinson's plate, 1st Jan., 1813, it appears in a panel, as follows:—

"M B
This Chapel Was Built
To the Honour of God and for the Use of
the Poor Infirm and Impotent People
Harbourd Within this Hospital
May' Mar' Bond Esq. Treasurer
Anno 1636."

M. Bond gave to the charity 100*l.* Some would derive the name from the French *loques*, rags or lint for wounds and sores; akin to the old English *locc*, Dutch *lok*, German *locke*, a lock of hair, a curl or ringlet, a flock of wool; others from the old English *loc*, a lock or door-fastening, hence *lûcan*, *locan*, to lock or fasten (compare the Latin *ligare* and Dutch *linken*), in connexion with the leper's necessary seclusion from mankind. Now just at this spot the high road from the Borough to Canterbury and Dover crossed a tidal stream, or rather ditch, one of the many that within living memory traversed this low-lying ground. The ditch flowed from the Newington and Walworth fields, and, known as the Lock, separated St. George-the-Martyr and St. Mary-the-Virgin parishes along so much of its course as lay northwards of Warner-street, which now joins the New and the Old Kent roads. Thence it ran south-east, between the present Bermondsey New-road and Weston (*antiquè* Hunter) street to Brook-street, by Star-corner, Bermondsey. The character of the ground which is now being excavated between the Bricklayers' Arms and Star-corner is sufficiently indicative of the marshy nature of the soil. Another long ditch, east of Tabard-street, formed a boundary line between the parishes of St. George and St. Mary Magdalen, Bermondsey. Whether the Lock ditch gave name to the hospital or *vice versâ* we cannot determine. It is plainly shown in Rocque's map of Surrey, 1750; whilst in Crosse's New Plan of London, 1836, is marked Lock's Fields, just south-west of the Paragon in New Kent-road. The bridge that carried the Canterbury pilgrims' way over the channel was exposed to view during the construction of a sewer along Tabard-street some years since. It consists of a pointed arch, in stone, with six ribs, having no mouldings, but merely chamfered edges, very similar to the arches at Stratford-le-Bow, of old London Bridge, or of the moat-bridge, Eltham Palace. The bridge is 20 ft. wide; the arch has a span of 9 ft., and is 6 ft. in height to the crown. It is supposed to have been built by the Bermondsey monks, as lords of the Great Liberty Manor of Southwark, at the end of the fourteenth century. Within the bridge was fixed a tablet bearing at either side the city arms and initials MSTB, and the Bridge-house mark, commonly, though erroneously used for the Southwark arms, with initials T B W L; below are the letters S M N The central inscription runs—

"This bridge was repaired A° 1641, at the charge of the Inhabitants of Newington and St. George's Parishes. And thus farre the Libertie of the Borrowe of South Warke extendeth."

In his Life of Pope, *à propos* of the poet's love of his money, Dr. Johnson writes that "the great topic of his ridicule is poverty; the crimes with which he reproaches his antagonists are their debts, their habitation in the Mint, and their want of a dinner." So, again, in his Life of Rowe he alludes to the death of "Poor Nahum Tate who [1716] died in the Mint, where he was forced to seek shelter by extreme poverty." Here are but two of the well-nigh countless instances that could be adduced of the reputation formerly enjoyed by so ill-favoured a quarter. But long ere this the Mint in Southwark had gained notoriety of another and more evil kind; as, indeed, we might naturally expect to find where sanctuary was given to insolvent debtors. From King Edward VI.'s day its gates offered asylum to traitors, felons, coiners, and outlaws, whilst its own black ditch (a boundary of St. Saviour's Parish) served for the maltreatment of process-servers just as did the Fleet behind Field-lane. The Mint has supplied scenes for Harrison Ainsworth's "Jack Sheppard" and for similar stories; Mat of the Mint and kindred allusions are familiar to readers of Gay's "Beggar's Opera." Jonathan Wild is reported to have stabled his horses within its precincts, at the Duke's Head, a wooden public-house in Red Cross-street, near to the Cross Bones burial-ground. Even as far back as Edward III.'s reign the London magistrates had made plaint of the frequent escape of "felons, thieves, and other malefactors and disturbers of the peace" into the "village" of Southwark. Thereupon, that Sovereign granted a charter for conveying the village over to the City in fee-farm, the bailiff or sheriff to account thereof annually at the Exchequer. In 1462 Southwark came fully within civic control, but was not constituted a "ward without" until 1550. By charter of 23rd of April, Edward VI. granted to the Commonalty of London the Manor of Southwark together with all manorial rights annexed, and criminal and civil jurisdiction.* The Mayor and Citizens paid 647*l.* 2s. 1d. for this grant, which Mr. Loftie tells us included some houses that had belonged to Charles Brandon, Duke of Suffolk, and had been sold by him to Henry VIII.; as also the site of Bermondsey Abbey.

Over against St. George's Church formerly stood Suffolk-place, the fair mansion of Henry VIII.'s brother-in-law.† The king exchanged Suffolk-place with Brandon for the Bishop of Norwich's "inn," somewhere in St. Martin's-in-the-Fields. He then set up a mint of coinage in the re-named Southwark, or Duke's, place. Queen Mary gave the Mint property in the King's Manor to Nicholas Heath, archbishop of York, in recompense for York-place, Whitehall, which his predecessor Wolsey had made over to her father. Heath sold it in 1557, when the purchasers erected many mean buildings on the estate, but left enough of the original house to serve for a residence to Sir Edward Bromefield (Lord Mayor, 1637-8), who lived here until 1650. His son John, who was created baronet March 20, 1661, settled "Suffolk, otherwise Southwark-place," upon his daughter Joyce on her marriage with Thomas, son and heir to William Lant, of London, merchant; whence Lant-street, Borough. In 7th Anne an Act was passed for certain improvements of the property, empowering Thomas Lant to give fifty-one years' leases. On Thomas Lant's death in 1722 the property passed, by his daughter's marriage, to the Bullock family. In 1773 it was advertised to be let as comprising 17 acres with 400 houses, and a rental of 1,000*l.* a year. At the death of Mr. J. Bullock, of Faulkborne Hall, Essex, M.P. for the shire, in 1811, the property was sold at auction in 98 lots, being 600 dwelling-houses, yielding 2,000*l.* annual rent.

Meanwhile the Mint had only increased in bad repute. In the Act 8 and 9 William III., for relief of creditors, the following sanctuaries in Southwark are scheduled:—Montague Close, or the Minories [*sic*], Mint, Clink or Deadman's Place. Yet matters mended but little, and another statute was enacted, 9 George I., c. 28, 1723, for the more effectual execution of justice in the Mint. The preamble to that enactment would go to show how necessary had become interference on the part of the Legislature. The "privileges" were declared to be abolished; but, by way of clearing the place, all debtors for amounts under 50*l.* were enabled, under certain conditions, to obtain relief from their obligations. In his "Curiosities of London," Timbs gives a quotation from the *Weekly Journal* of Saturday, July 20, 1723, describing the remarkable exodus of "some thousands of the Minters . . . . to be cleared at the quarter sessions at Guildford."

Some silver coins issued in 1551 from Henry VIII.'s Southwark Mint bear a mint-mark Y, for Sir John Yorke, Under-Treasurer. He is the same whom in 1549,—being Sheriff of London for that year,—King Edward VI. had knighted when he rested here for dinner *en route* from Hampton Court through the city to Westminster (Stow). This Mint should not be confounded with the earlier one which was established in Southwark under Æthelred II., and continued to coin money until King Stephen's time; that is, during the interval 978–1135. Its site, though not definitely ascertained, is believed to have been either by the original town-hall in Carter-lane, over against St. Olave's Church, or in Clink Liberty under charge of the bishops of Winchester.

EDINBURGH NOTES.

The International Exhibition at Edinburgh, which closes on the 30th inst., has been a centre of attraction to vast multitudes, and has proved a success financially, the estimated surplus being stated at about 20,000*l.* The largest influx of visitors on any one day occurred on Saturday, the 23rd of October, when 62,981 persons entered the turnstiles, taxing the capacity of the building to the utmost. The interior, indeed, has been overstocked with exhibits, leaving too little room for passage, and detracting from the general effect. The result would have been more satisfactory had four or six additional courts been added; but it is easy being wise behindhand. The behaviour of the vast crowds which frequented the exhibition since the reduction of the entry money to 6d. has been, upon the whole, remarkably good, and very little damage has been done. Amongst other amusing *contretemps* which occurred is one showing the popularity of Mr. Gladstone, whose effigy in stucco, painted to resemble bronze, has been twice deprived of the fingers of the right hand, which he holds out "in act to speak." This was brought about by admirers shaking hands with the image. Similar damage has been done to Mr. G. A. Lawson's "In the Arena," also of stucco bronze, from some adventurous wight having thrust his hand into the jaws of the lioness, and depriving her of some teeth.

Much difference of opinion exists as to the appropriation of the surplus money and the retention of the "permanent" building. It was proposed to present Sir James Gowans, the Chairman of the Executive Committee, with an honorarium of 2,000*l.* in consideration of his valuable and onerous services during the whole period of the Exhibition, but this offer he has declined. Parties are pretty equally divided as to the question whether the great hall should be retained on its present site or removed elsewhere. The objections to its being retained where it now is are that it occupies a considerable portion of public ground required for out-door recreation, and that, although it served its purpose as a temporary show, it is too mean and tawdry to be retained as a permanent public hall. On the other hand, it is maintained that the hall would supply a want, as there is no interior available for gatherings on a large scale. This want may, however, in course of time, be supplied in a more worthy manner, and the present erection, according to one suggestion, be disposed of to the Caledonian Railway Company to be utilised at the Lothian-road Station, which is in a state of dilapidation.

It will be remembered that some time ago it was stated in these columns that one of the newly-elected city members had indicated his intention of bestowing 50,000*l.* upon the University, for the completion of the new buildings. In his inaugural address at the opening of the session, Principal Sir William Muir said, "I made mention of the need of a Senate-hall as the necessary complement of our new buildings, and expressed the hope that some Mecœnas might arise, as in the sister University of Glasgow, to endow us with means for the erection of the same. It is no

* The Lock Hospital, Harrow-road (1842), was originally established for women, in 1746. The Asylum, hard by, forty years later, by the Rev. Thos. Scott, the Bible commentator.

* Rev. W. J. Loftie's History of London, second edition, 1884.

† *Vide Builder*, 27th March, 1886 (Mr. North's drawing of old arches).

longer a secret that the hope is within sight of being fulfilled. Before long, therefore, we may look to holding the solemnities of graduation and other ceremonial assemblies, such as this, in a hall of our own, supplied by the munificence of a fellow-citizen." A senate-hall formed part of the original scheme of the new University buildings, as designed by Dr. Rowand Anderson. The design shows a semicircular hall, divided into bays by massive piers, decorated by statues, in niches of the Cinque-cento style, with a lofty campanile, bearing considerable resemblance to that in St. Mark's Place, at Venice.

Another handsome gift to the University is announced as coming from Dr. Gunning, of Edinburgh and Rio Janeiro, to be devoted to prizes in the faculty of medicine, involving a present payment of 200*l.* per annum, and ultimately a bequest of 2,000*l.* Again, a sum of 30,000*l.* has been bequeathed to certain trustees for the erection and endowment of almshouses in the vicinity of the city for the benefit of those who may be deprived of their means by the failure of banks or other companies.

The stonework of the National Portrait and Antiquarian Museum at the east end of Queen-street is now completed, with the exception of some carving to be done *en bloc*. The general aspect of the building is severe, and is entirely unlike any other public building in the city. The style is English Gothic of the thirteenth century, with large traceried windows and an upper floor lighted from above. Mr. Ruskin stigmatised Queen-street as the bathos of architecture. This building would, perhaps, to some extent redeem it in his eyes.

On the vacant ground to the south of the Synod Hall, Castle-terrace, new premises are in course of erection for the use of the School Board; they are Italian in style, from the design of Mr. Wilson, Architect of the Board, and harmonise with the adjoining building. A marked feature in the elevation is a tower at the angle of Castle-terrace and Cornwall-street. The elevation towards that street embraces the whole site back to the Lyceum Theatre.

A remarkable building has just been opened for the Edinburgh Café Company, situated in Princes-street. The site is a narrow one, and the façade is run up into an acute gable, designed in the Renaissance style of the Low Countries. There is a considerable amount of carving and enriched detail delicately treated, the grit of the Crosshill freestone lending itself to such treatment. The red colour of this stone makes the building conspicuous, a peculiarity of which time will soon deprive it; but the Pointed gable and somewhat unusual detail give it a permanent individuality.

THE PRESIDENT'S ADDRESS, ARCHITECTURAL ASSOCIATION.

At the opening meeting of this Association for Session 1886–87, held on the 22nd inst., the President, Mr. J. Alfred Gotch, F.R.I.B.A., delivered the following address:—

We who are architects have set forth upon a difficult track, and, when the Bunyan of our profession shall arise, he may write an "Architect's Progress" full of adventures as strange, of misfortunes as various, of comforts as few, and ambitions as high, as those which have delighted generation after generation of English children since the time when the tinker of Elstow dreamed his strange dreams in the prison of Bedford.

Ours is, indeed, an arduous profession, and it is with no light heart that those who have the shaping of a young man's destiny should thrust him upon it. Ten years of toil may, perhaps, fit him to cross the threshold of independent practice. But to many that door is never opened, while to others it opens twice,—once that they may enter, and once that they may go forth, either to rejoin the army of those who work for others or to seek some different occupation, where the reward will be in greater proportion to the toil. In greater proportion,—ay, there's the rub. Surely no one will become an architect hoping to find a fortune. If he works hard during the day and for a little of the time that other men devote to tennis or billiards, a conscientious man may manage to live, and an unscrupulous man may do even better, but, as for fortunes, they fall to few in the architectural world. No; let him who enters for the race do it not for the prize but for the pleasure of running. If, by good luck, he gets the prize then is he doubly blest; but, if not, he still has the delight of exercising fine faculties in a masterly manner. This, however, is perhaps a refined joy that it is not in every one's nature to experience, and therefore, I say, let those who regard the practice of architecture as a money-making pursuit turn their eyes in another direction, or they will find themselves mistaken when, perhaps, it is too late. I do not deny that there are architectural practitioners who turn out much lucrative work at five per cent., and a good deal less; and in their work is patent the very natural desire to do as little as possible for the money they get. But the architect and the architectural practitioner are widely different beings, and it is for the benefit of the former, and not of the latter, that this Association is maintained. The spirit that should animate the architect, in common with all artists, is not the commercial spirit of doing no more than is absolutely necessary to avoid reproach and reprisals for non-fulfilment of contract, but rather that nobler spirit that aims at reaching its own ideals, even if in doing so it gives more than was expected or bargained for. Satisfy yourself as well as your client,—

> "To thine own self be true,
> And it must follow, as the night the day,
> Thou canst not then be false to any man."

In designing a building, no matter how humble, ask yourselves two questions,—first, Will this please my client? secondly, Would this please the Visitors of the Class of Design?

Once fairly embarked upon the sea of architecture, the most vivid impression one receives is from its limitless extent. There *may* be an ultimate shore of knowledge to which the architect may attain in time, but it is far below the horizon at the outset; and not infrequently it happens that when the voyager has left land so far behind as to render return impracticable, the outlook becomes rather dreary, for retreat is difficult, and there is no goal visible. The best thing to do, then, is to keep your eyes in the boat. Pay heed to the handling of the craft, and she will carry you into harbour sooner or later. This magnitude of the outlook, this feeling that no knowledge comes amiss, is at once the despair and the joy of the architect. On the one hand, it induces a feeling that no length of life and no strength of memory are sufficient to acquire and retain the information which it may be essential for him to have at any moment; on the other, it assures him that no day need be wasted, no experience fruitless. Consider for a moment some of the calls that may be made upon him. He may have to design a church, which implies an acquaintance with a special form of ritual; or a chapel, which, while possessing many points in common with a church, should yet be conceived in a wholly different spirit. His next work may be a school, towards which a knowledge of religious architecture will help but little. To design a row of cottages, with appropriate arrangements and internal fittings, such as will draw forth the commendations of the inmates, implies a considerable knowledge of the habits of the poor; while a gentleman's house could never be fitly designed by one who had not mixed with gentlemen. These are but a few samples of work which might fall to any architect's lot. Other buildings would call forth even more varied acquirements. A set of farm buildings, a range of stables, a bank, and a public-house, require a more intimate acquaintance with man and beast than any ordinary person would seek. Of course, much of this knowledge can and must be acquired by special effort as each case arises. It is really a matter of mastering your brief. But the knowledge must be acquired, and the more completely it is digested the easier will be the task and the better its results. I know a case of some swimming-baths where scarcely one of those concerned, including the architect, could even swim, much less claim to be a swimming man. The consequence is that all the small points of arrangement which go to make baths attractive are wanting. The brief had not been mastered.

An architect ought to be a man of wide sympathies, able to view things as much from the standpoint of others as from his own, able to throw himself into various parts as completely as an actor, and above all, perhaps, able to realise as he draws what will be the actual effect of his drawing in execution. All this he should be in his capacity as planner, that is to say, while reducing into working order the various points of the problem. In addition to this he must be able to clothe the result of his contrivance in fair outward garments that shall appear well, not only in the elevations, but on the perspective too. And this implies a long course of study of architecture, as usually understood by amateurs,—that is to say, of the Five Orders, of the Arch, of Proportion, of Fenestration, of Rhythm, of Light and Shade, of Mouldings, and of all the other headings into which treatises on architecture are divided. But all these things, if not preceded by well-contrived practical arrangements, are but as sounding brass and tinkling cymbals.

But let us suppose that these matters have been taken into consideration by the arbiters of our youth's destinies, and that he feels that he has other qualifications for an architect beyond a great talent for drawing. What are his prospects for fitting himself for his work? It must be admitted that he is better off than his predecessors. The facilities for acquiring knowledge, at any rate in London, are increasing year by year, and the student of to-day has a more defined and easier path to follow than the student of thirty, twenty, or even ten years ago.

First and foremost among the brighter prospects is the renewed activity of the Royal Institute of British Architects. This body has an age and a prestige which necessarily weigh much with the public; and if it keeps pace with the times, as it bids fair to do under the new Charter, it will be an invaluable instrument in consolidating the profession, in training students, and in maintaining a high standard of professional honour and ability. The new Charter, gentlemen, will inaugurate a new era in professional matters. It is earnestly desired by all the best men, and should any persons take upon themselves to oppose it, they will find themselves out of sympathy with the ablest, and most influential and respectable part of the profession. But, to my mind, its most important action of recent years, and one which will have as far-reaching effects as even the obtaining a new Charter,—is the institution of the compulsory Examination. This, gentlemen, is the first step towards establishing a universal test of competency for all practising architects, and I earnestly beg you to support the movement heartily by passing the Examination yourselves, and doing what lies in you to induce others to do so too. First of all, it is a certificate of competency which must be of use in starting business on your own account. Then it helps the public to distinguish those who have had a recognised architectural training from those who merely slip into a practice, or endeavour to gain a spurious prestige by the addition of initials to their names, conferred rather as the mark of a subscription duly paid than of any architectural merit. All of which tends to the detriment of the architectural status generally, and to the confusing of good work and bad. Finally, the mere effort of going through an examination is of service to the student, as it helps to crystallise much knowledge hitherto in solution, and to show him where his strength and his weakness lie. The effort while the student-days are yet passing is a mere nothing, but when the active practice has begun it becomes a matter of difficulty to find the time amid the engrossing cares of responsible work.

To all young students of architecture I say,—Regard the passing of the Institute Examination as the first landing on the long staircase that leads to fame.

The means of preparing for this Examination are naturally of great interest to all of us, and first and foremost we may, without conceit, fairly place this Association. I do not intend to explain to-night the working of our various classes, nor to weary you with a repetition of what you can yourselves gather from the Brown Book; but this I may say, that among the brighter prospects of the present day we may certainly include the recent improvements in our course of education. But beyond this Association there are many other means of acquiring the knowledge we are in search of. There are South Kensington, the Architectural Museum, the very important series of lectures at University and King's Colleges, besides many other lectures given under various auspices in different parts of London. There is also the fine library at the Institute, a means of instruction too often overlooked, I fear. Last, but not least, there is the Royal Academy. Into the great question of the Academy and its shortcomings I will not venture; but this I will say, that through the veil with which that august institution shrouds its emaciated form,

there dimly shine neglected possibilities of an architectural training, which, if properly made use of, might go far to solve the difficult problem of how to become an architect.

I have touched upon some of the means by which students can prepare for the Examination of the Institute, and I confess to have done so less with the view of tabulating them for immediate use than of drawing a moral from them. And the moral is this,—that it is highly desirable that some more concentrated system should be established. It may be said that ample means already exist for the student to gain the information he wants, but how can he avail himself of them when they lie wide as the poles asunder, and occur with no due sequence of time? What is wanted is a definite, recognised course of study, to be followed in conjunction with office work, and to a large extent during working hours. It is not fair to students to expect them to work all day and then to apply themselves with unflagging energy to a serious course of study in the evening. There may be offices where pupils do not at all times get wearied with what is put before them to do. But there are also many offices where a day's work is quite as much as ought to be expected from a young man in a day, and from which he would issue in the evening not altogether fitted for making the best of further opportunities for study.

This question of concentrating the opportunities of education is, I am glad to say, now under the consideration of a committee appointed by the Institute, and we may hope before long to have valuable suggestions, not only how to make use of the existing multifarious and conflicting means of learning, but also, I hope, for a further departure in the direction of establishing a central educational agency.

So far, we have been considering these questions, consciously or unconsciously, as dwellers in London. It is to dwellers in London that the profession offers what instruction it has; outside of London there exist but few opportunities of acquiring knowledge other than by office work and private study, which, from lack of guidance, is often desultory and misdirected. But there must be something done for dwellers in the provinces. A better state of things would be brought about by some scheme of federation; but the lines upon which that federation should take place will require very careful consideration, and the question will have to be dealt with in a straightforward manner by persons who represent the whole profession and not merely its obscurest members. Affiliation of local societies with the Institute is another step in a good direction, and when once the profession has been bound together, further steps towards the establishment of a regular course of study and of examinations will become possible, and we may hope to purge ourselves of much that is incompetent, uncultured, and detrimental to the art we follow.

But, gentlemen,—and more especially young gentlemen,—there is no reason, because no regular highway to knowledge is yet formed, that we should not struggle manfully along such tracks as we have. Our present system of education is pupilage. Then, pupils, extract as much information from your principals as you can! Get to know the reasons for everything. I well remember how hopelessly I used to flounder about when I was a pupil, and to wonder whether I should ever learn the system upon which plans were devised, or under what circumstances one ought to use certain strengths of timber. Things became clearer after a time, and when I began to feel a real interest in the work; but for some years I felt that I certainly should never know enough to start work on my own account,—everything seemed so vague and shifting; but, then, I was taught in the country, and did not know even of the existence of the Architectural Association. These things I mention in case any beginner may be in the same plight. Stick to it, and the atmosphere will gradually clear. One way of learning is to do thoroughly what you have to do. Let every line you put on the paper have its mission. Have a reason for putting every door and window in one place rather than another. Think everything out as carefully as a move at chess; learn the meaning of every phrase in a specification, and put nothing in from one to another that is not applicable to the new work. By such means you will save yourselves much subsequent worry and many reproaches, and you will be spared the mortification of hearing that your bedrooms have no wall-space for the bed or your drawing-room for the piano, or that you have called for extravagant work in a cottage, where every halfpenny has to be saved. Depend upon it, the three qualities of thoroughness, exactitude, and neatness, though they will not make an architect, will go far to help an architect to live. There is no doubt that the pupil, if he means to get on, will have to devote much of his leisure time to acquiring those branches of knowledge which he cannot pick up in the office. But this need not necessarily be always an irksome task, for the range of subjects to be mastered is of such extent that one can generally find relaxation in change of work. Nevertheless, it is well for the beginner to realise that the task of learning to be an architect is a more serious matter than learning to be a doctor or a lawyer, and calls for a greater sacrifice of the amusements which are the birthright of youth. It is my desire to see this changed, and to enable pupils to devote part of their ordinary working hours to the pursuit of such learning as cannot be picked up in the office; and our present system of architectural education is little better than a long-continued course of "picking-up."

There is no doubt that a thoroughly good school education is of great benefit to an architect. He comes in contact with so many classes,—the well-to-do and the cultivated, as well as the unlettered and the ignorant,—that a liberal education is of the first importance; and I would urge all concerned not to cut short the school career of the destined architect, but to ensure his obtaining a wide general knowledge before he devotes his attention to the special branches more particularly relating to his profession. The proper study of architecture implies as wide and general culture as a university education, and will, I hope, some day convey as much prestige.

But, gentlemen, we will suppose the preliminary stages past, and that our young architect is launched into independent practice. Do his difficulties cease, or are the days of his learning numbered? No more, all love tales to the contrary notwithstanding, than does the interest of ordinary life end with marriage. With the elation of independent practice comes also the burden of responsibility. The most careful design will sometimes be spoiled by bad workmanship, and the honey of forethought in plan and beauty in elevation will be turned into the gall of failure through the incontrollable carelessness or dishonesty of others. All the mistakes which might have occurred but did not, owing to the care of the architect, are either never known or forgotten, while the one failure which is not his is remembered against him for years. Then, again and again, will come the difficulty of deciding whether indifferent work is bad enough to condemn, or whether it may be passed with a reprimand. A cantankerous client or a stupid workman will contrive to poison the streams of life for days together.

But there is a reverse side to the medal. If there are worries which gnaw there are also joys which heal. A fine, full life is that of the architect, too diverse to be monotonous, too full of important decisions to be dull, and while the consciousness of power is elevating, a reflection on the permanence of its effects is sufficiently sobering. With such varied interests to serve he can hardly be other than broad and liberal in his views. He will hardly be so bigoted as to decline to build a place of worship for another sect than his own, or so fanatical a politician as to refuse to be concerned for a club of the opposite party. To him the desire to produce a building well adapted for the purposes it has to serve supersedes all other considerations: his art is first, his politics second.

And when he quits the shadow of his office, and seeks a respite from his cares, his own art still offers him the choicest pleasures. Where can repose be more surely found that in the long-drawn aisles of some cathedral, or amid the lichen-covered walls of some ruined mansion? To him, beyond all men, are revealed the mysteries of ancient buildings. He can read where others only stand and wonder. To him the sequence of time in pier and arch and roof is obvious at a glance. He learns the story of a building from its stones. Carving, which to others is merely a quaint puzzle, reveals to him some notable fact in the sequence of events which brought the building there. The dead speak to him from their tombs, and write their history for him on their painted shields. In him the wayward enthusiasm of the amateur for antiquity is sobered by knowledge gained from modern work, and it is often his lot to listen with humorous sadness to the monotonous story of the verger. From the calm precincts of the cathedral he may go to the calmer lawns of some ancient house, where, amid the scent of flowers and the rustling of stately trees, he may learn the lesson of design, and fill his soul with a sense of noble beauty, which, transmuted and transformed, will find its way into the buildings of to-day, and help to stamp the architecture of our time with a fitness, a power, and an originality, such as architecture has not seen for two centuries.

[Some notes of the discussion which followed will be found on another page.]

MANCHESTER ARCHITECTURAL ASSOCIATION.

The twelfth session of this Association commenced last week, when a *conversazione* was held.

The President, Mr. Lawrence Booth, delivered an address, in the course of which he said that the coming year would be made memorable as the jubilee of her Majesty's accession. While no half-century could show such a record of real progress as the fifty years covered by her Majesty's reign, they as architects would probably be subject to the outside reproach that architecture as a fine art, distinct from the more general application of the term art, had not been enriched by the evolution of any new style that could with propriety be called the Victorian. Unless the "crystal" or glass-and-iron system of construction could be dignified by such an appellation, of which it could hardly be said to be worthy, they must accept the reproach for what it was worth, always remembering that the true principles of art were "not for an age, but for all time," and could not be invented like a new machine or those thousand and one industrial appliances which in the aggregate had conferred innumerable blessings on the people. Both the possibility and desirability were indeed debatable questions; and whether in what architects had been privileged to do there were any of the germs of a new style time alone could determine. Those who were still engaged on the work were too near it to comprehend its proper proportions. It might, however, be fairly claimed for the Victorian era that, owing in a great measure to the initiatory efforts and fervid eloquence of the elder Pugin, it had seen the revival of Gothic architecture; the resuscitation, for what it was worth, of the "Queen Anne" style; and now they were in the throes of a struggle for the reintroduction of the so-called Jacobean. Concurrently with these efforts much that was best in the ancient styles of architecture has been faithfully adopted to the modern and diversified requirements of an exceptionally progressive age. Without wandering far afield for examples, the warehouse architecture of Manchester might be cited in evidence. Given the same atmosphere and other favourable conditions, there were streets in our city whose architecture was not unworthy to be compared with that of ancient Venice. But probably the architect of the period would prefer to base his credentials on the utilitarian and hygienic character of his work,—the utilisation of such materials as cast and wrought iron and concrete; terra cotta, both as tiles and solid building material; glass at its wonderfully reduced cost and in its almost unlimited capability of adaptation; and even such articles as india-rubber and paper for constructive purposes. These, together with a host of "inventions" which the architect could for the most part only claim the credit of having adopted, had almost transformed the utilitarian character of modern buildings. In all the essentials to comfort, to a healthy and therefore a prolonged existence, the pauper of to-day was better housed than was the peer of fifty years ago,—an assertion not less true than startling. Between these two extreme representative members of society there were others for whom much required to be done, and the architect of to-day was a willing co-operator in the good work. Aided, and sometimes, he was sorry to say, thwarted, in his efforts by the numerous local sanitary authorities dotted all over town and country, he was actively engaged in the most beneficent

branch of his profession, letting in light and air on thousands who had not hitherto had their proper share of two of heaven's best gifts. There was on such matters still much hesitation to be overcome in places where it should be least expected, and only the few had the full courage of their opinions. He trusted that in the arrangements for the illustration of architecture in the Jubilee Exhibition there would be the opportunity afforded of showing hygienic and utilitarian as well as artistic progress. Some disappointment, founded on the casual reading of the prospectus and the regulations, had been experienced at the apparent omission of provision for the display of architectural work; but he was happy to say on the best authority that there had not at any time been such an intention on the part of the promoters, and he hoped his professional brethren would be well to the front in the display of what architects had done and were doing for the general good.

A vote of thanks to the President for his address, proposed by Mr. Alderman Bailey, was heartily accorded.

GLASGOW INSTITUTE OF ARCHITECTS.

The annual meeting of this Institute was held on the 19th inst., Mr. James Sellars, President, in the chair.

Mr. Maclean, the Secretary, submitted the eighteenth annual report, which stated that the Burgh Police Health (Scotland) Bill had again occupied the attention of the Council. In the beginning of this year it was thought desirable, in view of the probability of the Bill being again brought before Parliament, to continue the efforts formerly made by the Institute to get the building regulations eliminated from the Bill and embodied in a separate Building Act applicable to the whole of Scotland. For this purpose a committee, consisting of the President, Mr. John Honeyman and Mr. James Thomson, past Presidents, was appointed. The committee brought the subject before the Edinburgh Architectural Association, and requested their co-operation in a further representation to the Lord Advocate. The Edinburgh Association was found to be in entire sympathy with this Institute in its past and present efforts, and they sent a memorial to the late Lord Advocate praying that the building clauses of the Burgh Police and Health (Scotland) Bill be embodied in a separate Bill. A similar memorial was sent to the late Lord Advocate from the Institute, and a reply was received to the effect that the views expressed in the memorial would receive careful attention. The Bill had, however, been dropped in consequence of the late dissolution of Parliament, but a new Bill would probably be introduced in the present Parliament, and the Council hoped that the Institute would continue to press the views they had held and advocated so long. It was a matter of great satisfaction to them to be able to say that their views had now the active support of the Edinburgh Association; and, further, that they were now approved and supported by the Glasgow municipal authorities. For the encouragement of students in the Glasgow School of Art it was recommended that a sum of 7*l.* 10s. be given, the sum to be divided into two prizes of 5*l.* and 2*l.* 10s. respectively, under the following conditions:—That the prizes be named "The Glasgow Institute of Architects' Prizes," and that they were awarded (*a*) for the best set of four drawings of architectural ornament drawn from casts in the School of Art; (*b*) the best set of at least four measured drawings from existing buildings; (*c*) the best set of lecture-notes on building construction. The report also contained a letter from Mr. John Shields, one of the trustees for the Alexander Thomson Memorial, in which he stated that he expected that at Martinmas, 1887, the sum of 75*l.*, or thereby, would be available for the prize in the first competition. One of the conditions of the trust is that the studentship or prizes shall be awarded for the furtherance of the study of ancient Classic architecture, as practised prior to the commencement of the third century of the Christian era, and that the prizes shall be awarded by competition every third year.

Mr. T. L. Watson (Treasurer) submitted the financial statement, which showed a balance in hand of 267*l.* 15s.

The President, in moving the adoption of the annual report, said, "They were still endeavouring to convince the Imperial authorities, although with only moderate success, that building regulations should be the subject of a separate Act, instead of being mixed up with the Police Acts. The deputations and memorials had always been courteously received or acknowledged, and then apparently forgotten. The last time the general Bill was introduced by the late Lord-Advocate it still contained the building regulations to which they so strongly objected as being in themselves inadequate and incomplete, and altogether out of place in a Police Bill. The recent changes in the Government had been in their favour. The legislators had had weightier matters to consider, and the Burgh Police and Health (Scotland) Bill had been brought up, only to be dropped again and again in past sessions of Parliament. The delay was a gain to the Institute, and they need not, however, be discouraged. For some years their local legislators were apparently quite indifferent to the Institute's representations on the subject, but recently they themselves memorialised the Government in favour of a separate Building Regulation and Health Act. Some further progress had been made during the year in the direction of improving the rules for the measurement of artificers' work. Their representatives, along with the representatives of the Institute of Measurers and the Master Wrights' Association, had been engaged on the new rules for measuring wrightwork, which were now nearing completion. The rules for other departments of work would soon be before them also, and probably during next year new and improved rules would be prepared for the measurement of every description of work connected with buildings. When that was done a good and useful work would have been accomplished. Another matter to which he would call their attention was the proposed revision of the articles of association and table of fees. Experience had shown them that both were in need of amendment, and he trusted the committee would proceed with their work energetically, and that the result of their labours would be to amend the articles of association in the required direction, and to arrange the table of fees on a more equitable basis than it was at present. There was just one other matter in the report to which he need refer, viz., the Institute prizes, competed for at the School of Art, and the Alexander Thomson Memorial Travelling Studentship. Architectural students in Glasgow had no great facilities for training in their profession outside of their offices. They deserved the utmost credit for the work they did in their own association, but they needed both encouragement and help in their studies, and they were entitled to look to the Institute for aid. He was quite sure the Institute would be willing to continue and increase the prizes offered at the School of Art, and thus co-operate with the committee of that admirable institution in their desire to raise the status of architectural education in Glasgow. The Alexander Thomson Memorial Travelling Studentship should do much for the encouragement of architectural students in Glasgow and elsewhere, for the competition was open to every student in the United Kingdom. The sum available every third year would be about 75*l.*, and it would be paid to the successful competitor to enable him to study the best architectural work in this country or abroad. The terms of the competition would be issued very soon, and the benefits would be enjoyed by the successful competitor during the summer of next year. Glasgow hardly knew the artistic treasures it possessed in Mr. Thomson's works. It was to a great extent true of Alexander Thomson that a prophet was not honoured in his own country, and that a man was seldom known till he was dead.

The report was adopted.

On the motion of Mr. A. G. Thomson, the following gentlemen were appointed members of Council:—Messrs. Alex. Skirving, Wm. F. M'Gibbon, Jas. Sellars, J. J. Burnet, Hugh Barclay, Wm. F. Salmon, John Gordon, T. L. Watson, David Thomson, Jas. Thomson, and H. H. M'Clure.

At a meeting of the newly-elected Council held immediately afterwards, the following office-bearers were elected:—President, Mr. David Thomson; vice-president, Mr. H. H. M'Clure; auditor, Mr. John Burnett; treasurer, Mr. T. L. Watson; and secretary, Mr. Wm. Maclean.

PRACTICAL CLASS OF MASONRY.

On Tuesday evening last the new class for the study of practical masonry and the science of stonecutting, recently formed under the auspices of the Architectural Association, assembled for the first time at the Central Technical Institute at South Kensington.

Mr. Lawrence Harvey, a former student of the Zurich Polytechnikum and the École des Beaux-Arts at Paris, has kindly undertaken to give the benefit of his knowledge and experience to the class gratuitously as instructor, and in his introductory lecture he explained the objects and importance to architects of this branch of study, for which there has hitherto been no opportunity in this country, though it forms an integral part of the curriculum of most Continental schools.

The *modus operandi* which he proposed was to select a small number of the senior students, —say ten,—to form the first class, whom he would instruct himself; and they in turn would act as teachers to the subsidiary classes (though he promised to attend these also), which would meet on alternate Tuesdays with the senior class, and they might again act as teachers to others if the numbers increased sufficiently; the object being to make every man a teacher as well as a learner.

Mr. Harvey further explained that the usual method adopted in the study of this subject was to begin with a course of descriptive geometry; but he preferred to start with the more practical and useful part, viz., the method commonly employed by masons at all times in setting out and cutting the variously-shaped stones in a building, and he argued that by beginning at the more interesting stage of the question many would thereby be attracted who might otherwise "fight shy" of the dry bones of abstract definitions. This part of the subject might be studied with advantage privately.

The class would begin by making drawings of the various stones in a given design, and they would then be instructed as to the manner in which a mason would set out his work preparatory to cutting it, after which they would proceed to cut the stones themselves (a special composition being provided for the purpose), and finally a model would be built up of the various pieces to ascertain that they all fitted accurately in their places. This process would be repeated for plain ashlar, arches of various descriptions, cupolas, &c.

The lecturer concluded by assuring his audience that after a practical course of this description many difficulties which they might have hitherto experienced in the scientific projection of mouldings, the forms taken by vaults in various positions and the intersections of the same, the jointing and bonding of masonry, and numberless other small matters too numerous to mention, would disappear; and he confidently anticipated in the future that the foundation of such a class as this would show itself in the more workmanlike manner of preparing working drawings by those who had been members of it.

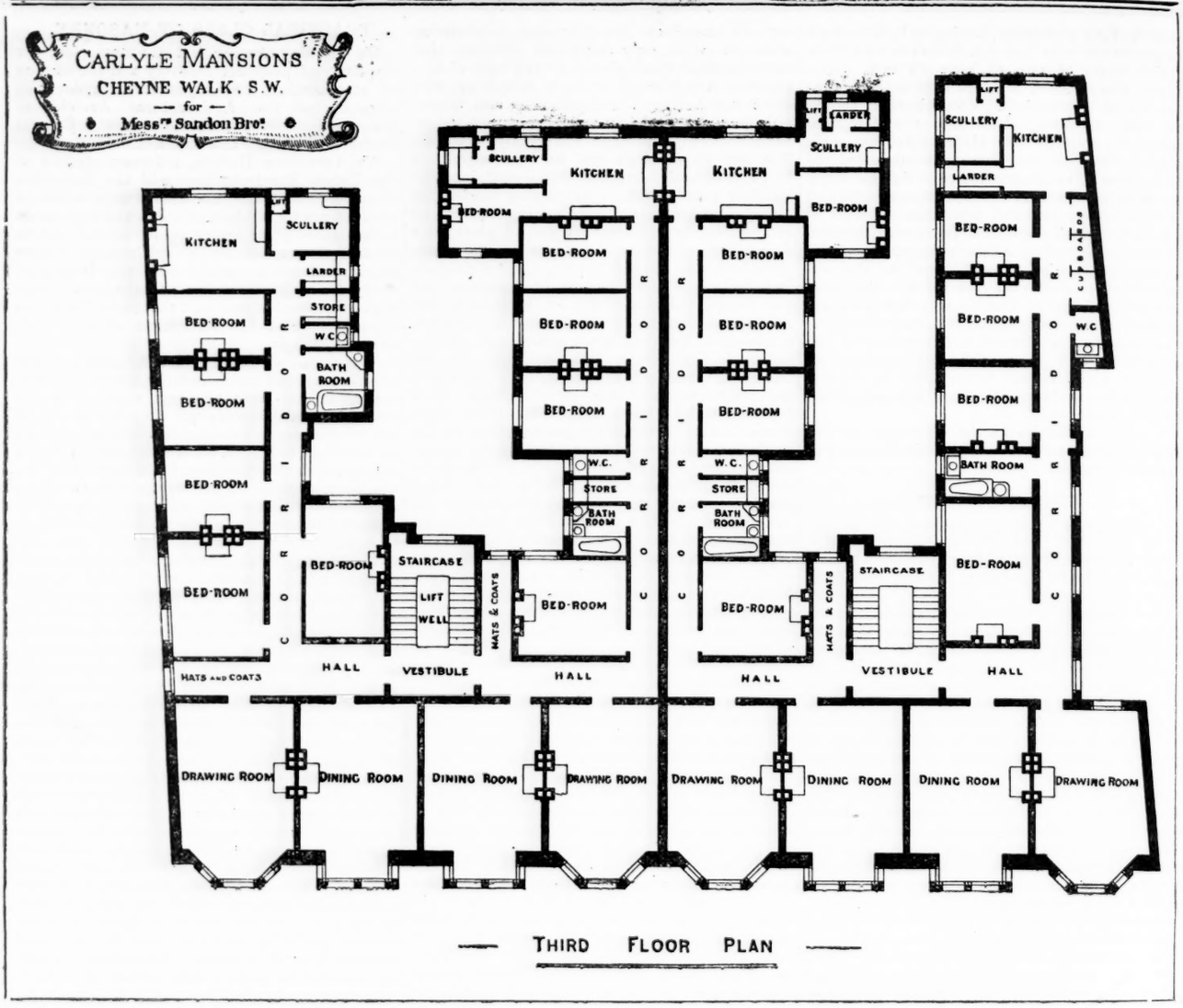
A few words from Mr. Arthur Cates and Mr. Robins, on the importance of the subject to students, and urging them to take advantage of the facilities now offered for the first time, brought the proceedings to a close.

BUILDERS' CLERKS' BENEVOLENT INSTITUTION.

The election of two pensioners and one orphan took place on Tuesday evening last, the 26th inst., at the offices of the Institution, 21, New Bridge-street, Mr. George Haward Trollope, the President, in the chair. There were three candidates for the pension, and the following was the result of the polling, viz.:—Edward Leconte, 586 votes; Eliza Mackness, 334 votes; and Louisa Hadril, 108 votes. For the benefits of the orphan fund there were likewise three candidates, the voting being, for Lizzie Chapman, 569 votes; Alice Rhoda Friend, 349 votes, and James Alfred Kelly, 88 votes. The chairman therefore declared that Edward Leconte and Eliza Mackness had been duly elected pensioners on the Relief Fund (the pension in the former case being 25*l.* per annum, and in the latter 20*l.* per annum); and that Lizzie Chapman had been duly elected to the benefit of the Orphan Fund, this consisting of admission to the Orphan Working School per presentation of the Builders' Clerks' Benevolent Institution.

At the close of the election the services of the scrutineers, Messrs. Thos. Stirling, T. F. Rider, and B. C. Fox were warmly acknowledged.

A cordial vote of thanks was also given to the President, who spoke of the gratification it had afforded him to be present and to take part in the work of so useful a charity.



Illustrations.

ST. SAVIOUR'S CHURCH, HANLEY ROAD, HOLLOWAY.

THESE are the exterior and interior perspectives of the design selected in competition, under motto "Easter Eve, 1886," a note of which appeared in our number of July 3rd, p. 37.

An iron temporary church covers the ground at the west end (up to the west wall of the nave), which is not to be interfered with at present, so that the ground available to seat the number required, *i.e.*, 700, is confined. The narthex, tower and spire, and parish room are to be added at some future time.

The church is to be faced on the exterior with red bricks, with bands, strings, window-cills, tracery, and labels of Bath stone. The interior will be plastered, with arches, strings, quoins, &c., of red brick. The pillars will be of Portland stone, and the remainder of the stonework of Bath. The roof will be boarded above the rafters and covered with slates. The seating will be of oak, and the passages will be tiled. The church abuts at the east end on houses, so it is intended to put blank arcading, in place of a window, to be filled in with colour decoration.

The church committee have sanctioned sundry additions and improvements (suggested by the architect) to the original design, making the estimate for the first portion of the church, —viz., nave, chancel, aisles, and vestries,— 5,500*l*.

The building is to be commenced in the spring. Mr. J. P. Cutts (Messrs. J. E. K. & J. P. Cutts) is the architect.

CARLYLE MANSIONS, CHEYNE-WALK, CHELSEA EMBANKMENT.

UPON a site in Cheyne-walk, Chelsea, overlooking the gardens of the Chelsea Embankment, there has just been erected a pile of residential chambers to be known as Carlyle Mansions. They are within a stone's throw of the residence of the late philosopher, and overlook the statue erected to his memory.

The buildings, of which we give an illustration, are fireproofed on all floors.

The fronts are of red brick with Portland stone dressings, and freely treated with stone and brick carving, of good execution.

On the flank wall the blank windows have been treated as panel pictures in stone relief, with various selections from Æsop, and other designs.

Each flat, of which there will be twenty-four, consists of two sitting-rooms, five bedrooms, kitchen, scullery, stores, bath-room, &c., and tradesmen's lift.

In the staircase, in which a feature has been made of a wrought-iron grille railing, by Messrs. Starkie Gardner, & Co., a passenger lift, by the American Elevator Company, is fitted, which will give access to all floors.

The premises have been erected by the proprietors, Messrs. Sandon Brothers, of Marklane, from the designs and under the superintendence of Mr. W. Seckham Witherington.

"GREAT ASSEMBLY HALL," MILE END-ROAD, E.

THIS forms part of the buildings which have been designed and erected for the purposes of the "Tower Hamlets Mission."

It joins, and is in conjunction with the front buildings to the Mile End-road, which were opened in November, 1884.

It is arranged to accommodate nearly 5,000 people, having two large galleries above the ground-floor space.

The hall, including the platforms and orchestra space beyond, is 130 ft. long by 70 ft. wide in the clear, and of an interior height of 44 ft. The galleries are of a good height, and the method of seating is such as to enable the furthermost sitter to obtain a view of the speaker. These galleries are approached by four spacious staircases of fireproof construction, and the exits throughout are numerous and convenient.

The three entrances from the Mile-End-road lead into the octagonal entrance-hall, which is designed to be used for small meetings, or as a lecture-room. It is lighted from above, and is 44 ft. each way, by 34 ft. high. There are doorways into the "coffee palace" and "book saloon," and three large entrances into the great hall.

The building is lighted by day from windows ranging on each side, with clearstory windows over the galleries, beneath the flat ceiling, breaking the line of the coved sides. The ventilation throughout has been well considered, and is very satisfactory.

The heating is by an improved system of hot air by Messrs. Constantine, of Manchester.

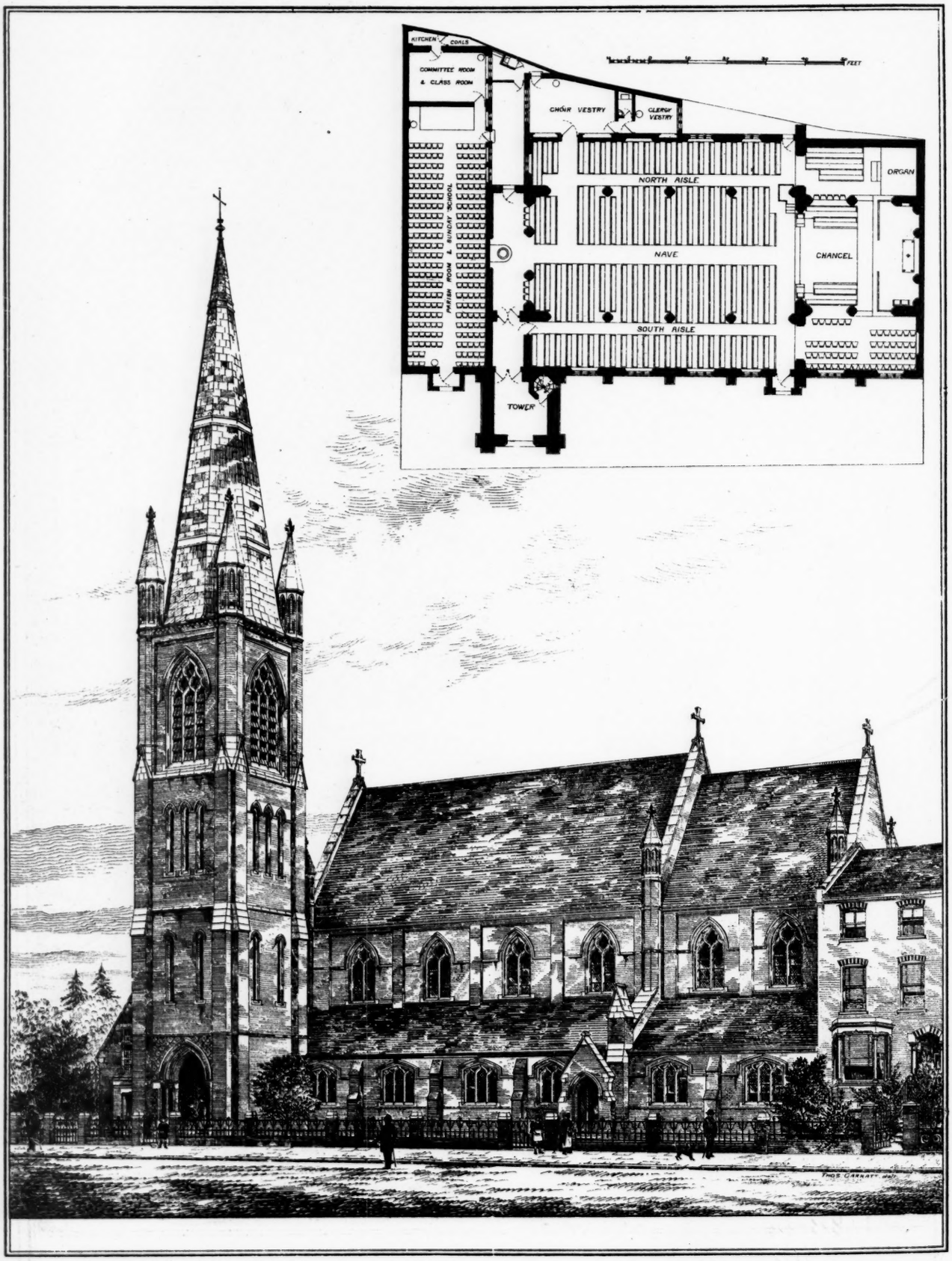
The lower and upper platforms with the choir space behind terminate with a great organ by Messrs. Bevington & Sons, and there is a large class or committee room beneath. Groups of angels in the act of praise form a bas relief over the great arch which encloses the orchestra, and a curtain with a representation of the "Sea of Galilee" and the "Feeding of the Multitude" is an appropriate finish when the organ is not in use.

The architecture has been purposely kept very simple, utility being the object, yet it is an effective building well adapted to its purpose. The decoration in warm orange and browns imparts an impression of comfort with grateful relief to the eyes.

The contractors were Messrs. Lawrance & Sons, of City-road. The clerk of the works was Mr. W. Stanley.

The architects were Messrs. Boulnois & Warner.

The building was erected between May, 1885, and February, 1886.

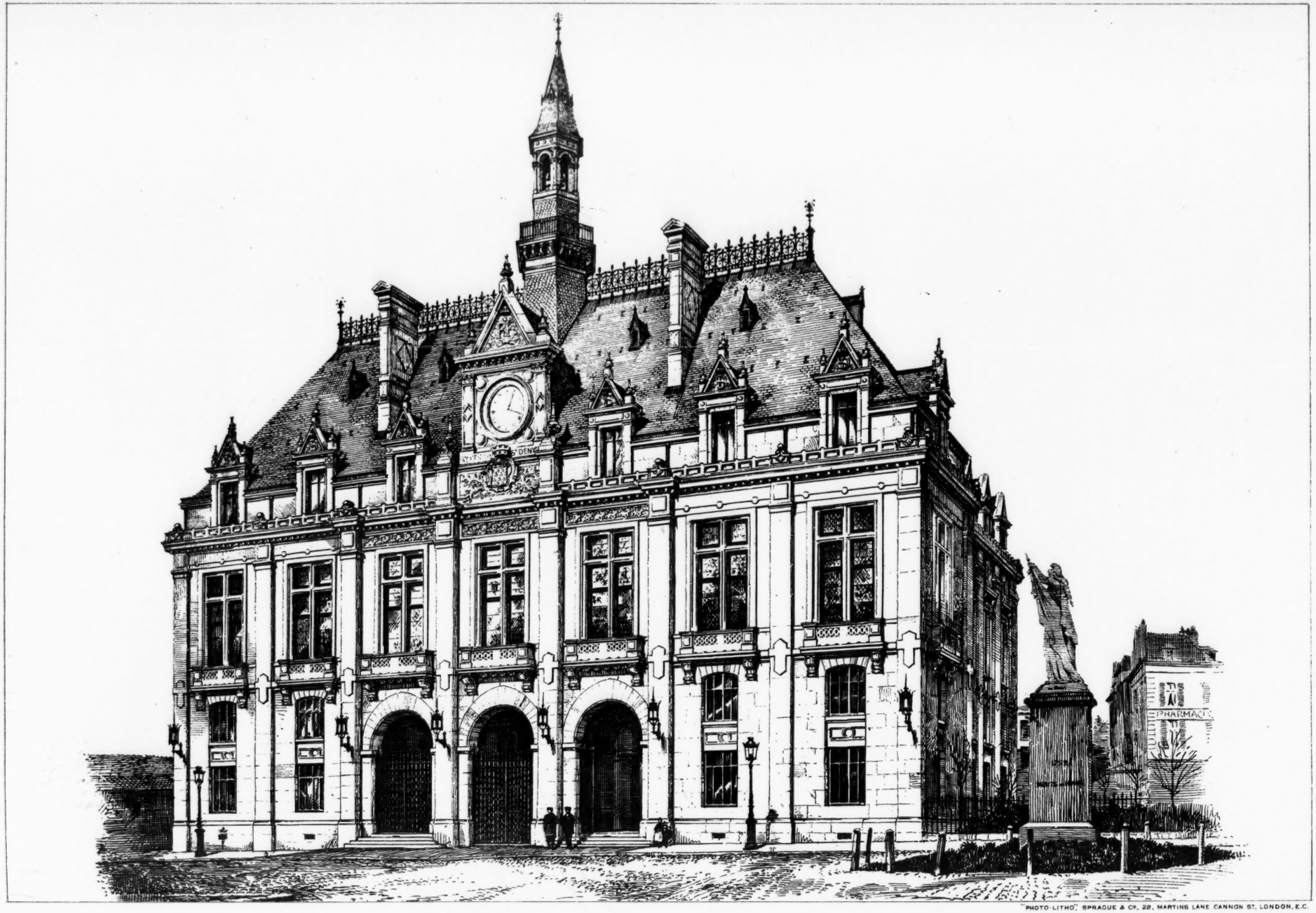


C.F.Kell Photo Lith & Printer 8,Furnival St Holborn,London,E.C.

SAINT SAVIOUR'S CHURCH, HOLLOWAY.—Mr. John P. Cutts, A.R.I.B.A., Architect.

C. F. Kell Photo-Lith. & Printer 8, Furnival St. Holborn, London, E.C.

SAINT SAVIOUR'S CHURCH, HOLLOWAY.—Mr. John P. Cutts, A.R.I.B.A., Architect.

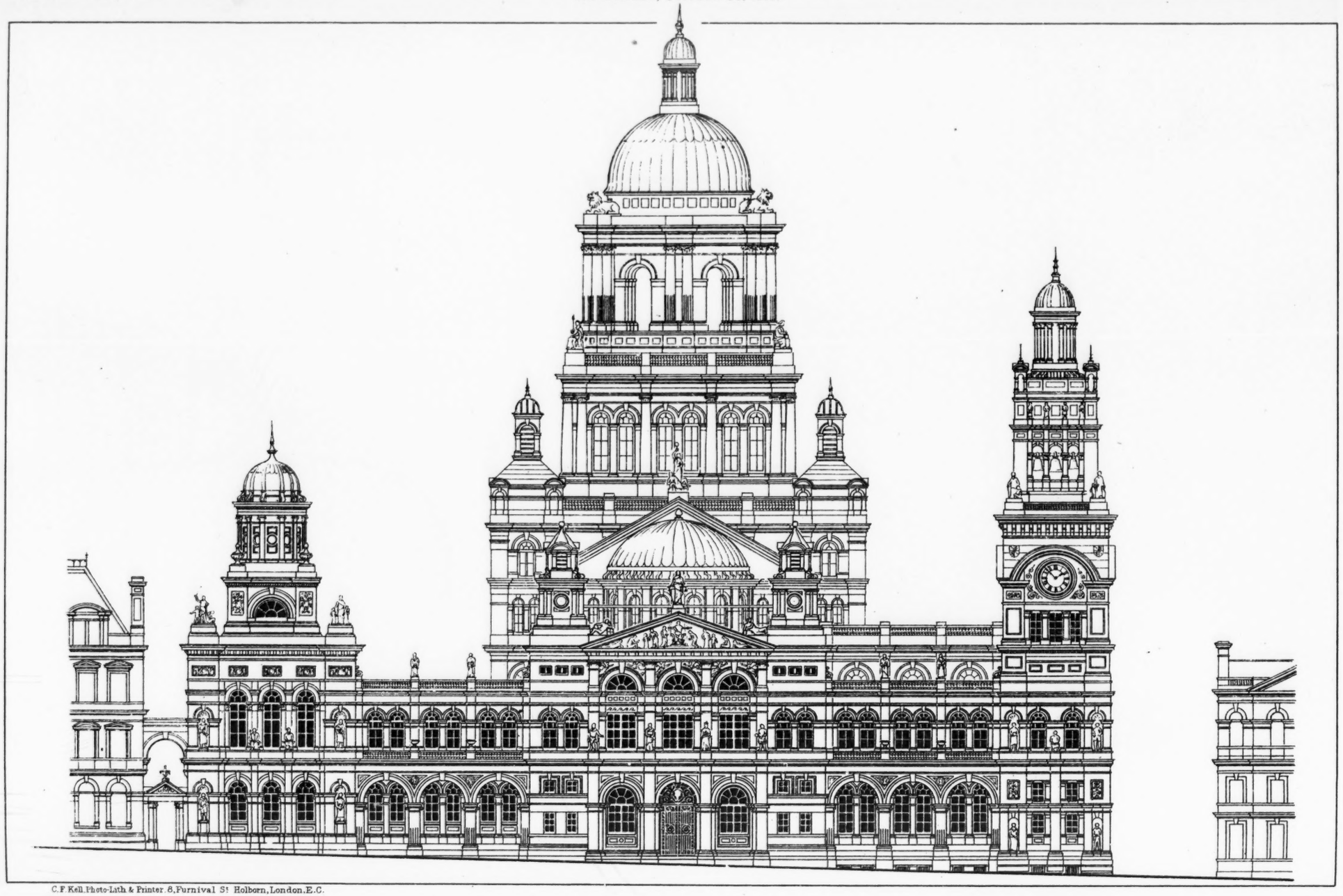


"PHOTO-LITHO" SPRAGUE & Co. 22, MARTINS LANE CANNON ST. LONDON, E.C.

NEW MAIRIE, ST. DENIS.—M. Paul Laynaud, Architect.

"PHOTO-LITHO" SPRAGUE & Co., 22, MARTINS LANE, CANNON ST. LONDON, E.C.

CARLYLE MANSIONS, CHEYNE WALK, CHELSEA EMBANKMENT.—Mr. W. Seckham Witherington, F.R.I.B.A., Architect.



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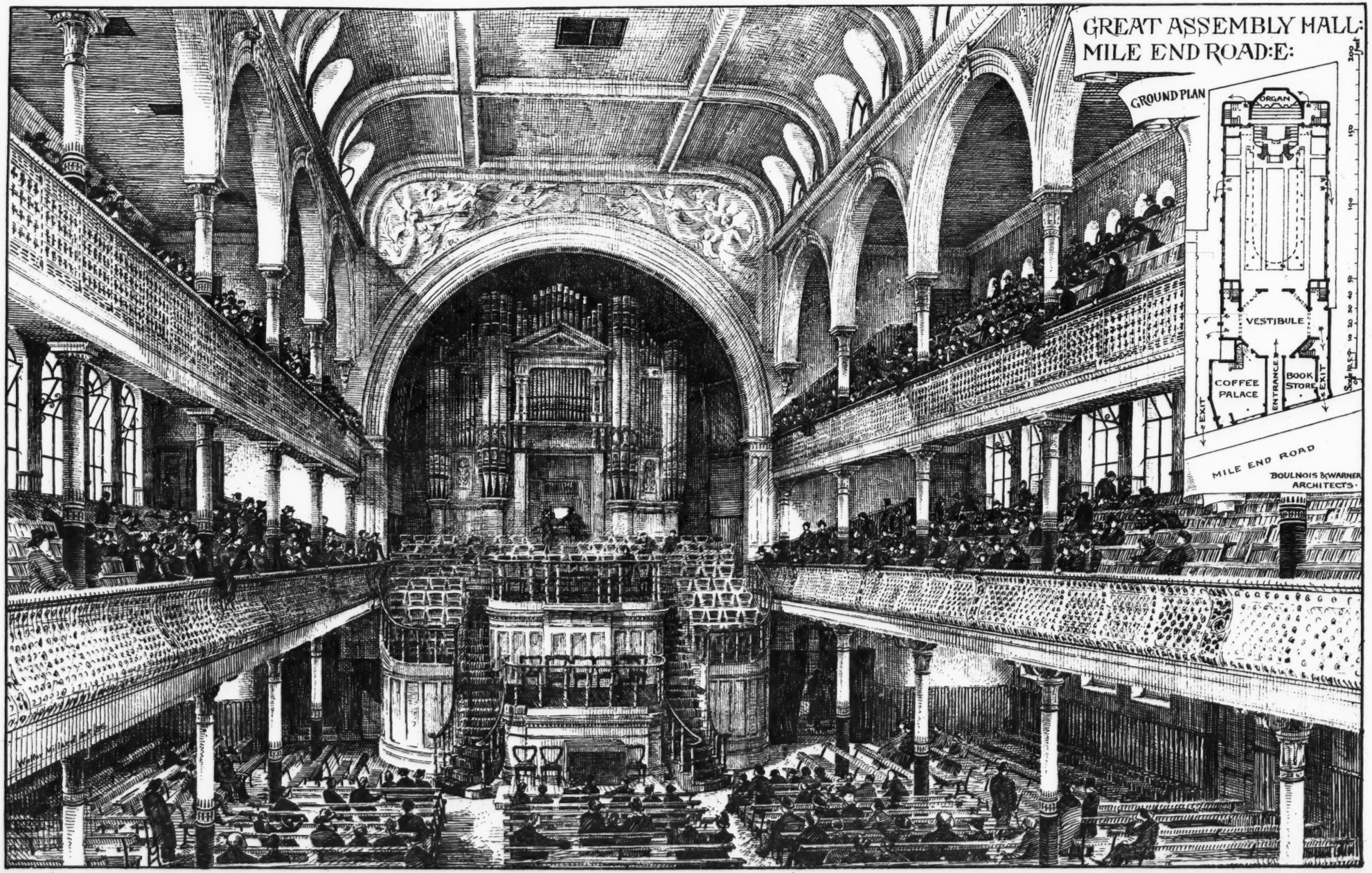
COMPETITIVE DESIGN FOR THE BIRMINGHAM LAW COURTS.—Mr. R. Stark Wilkinson, A.R.I.B.A., Architect.



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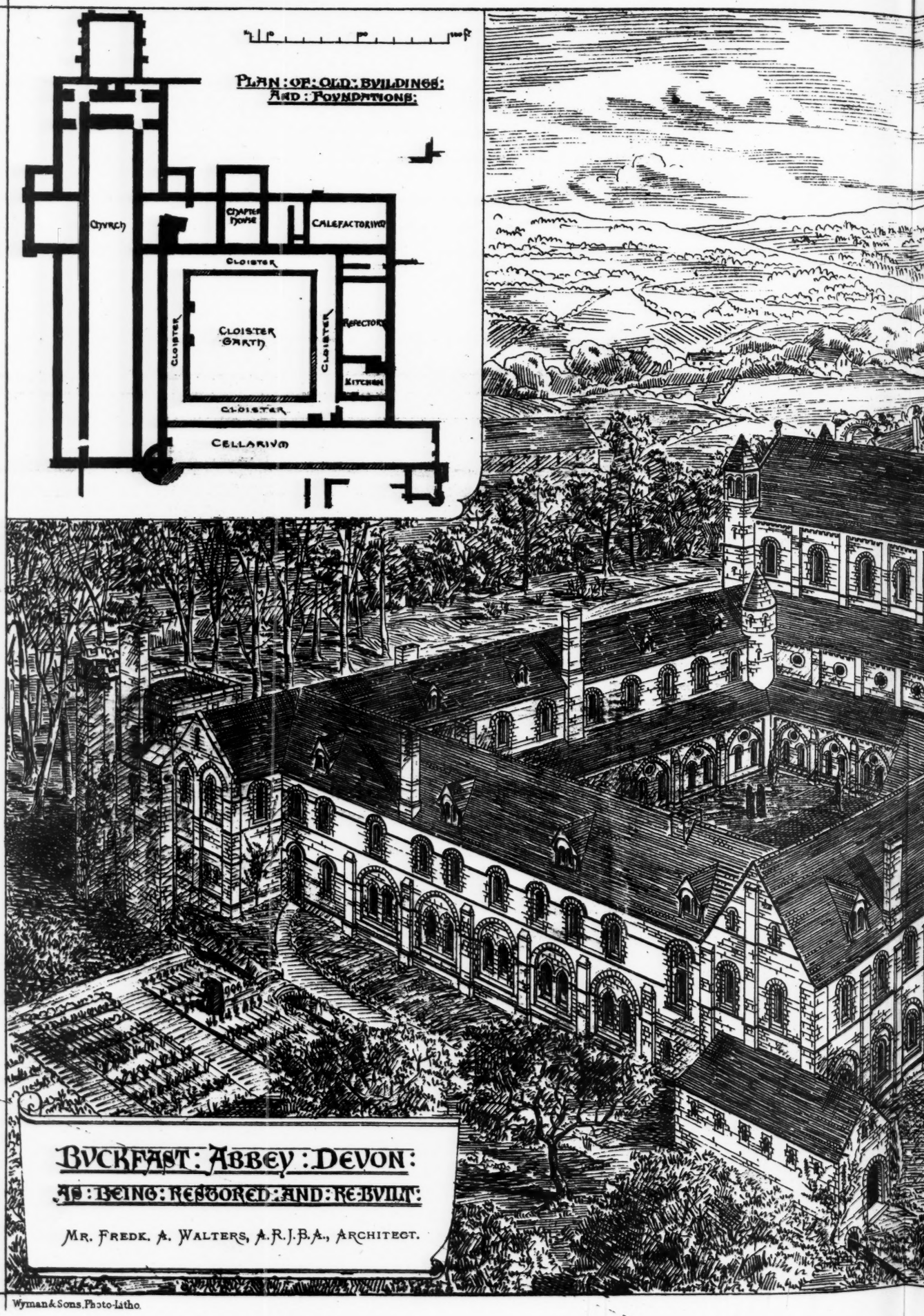
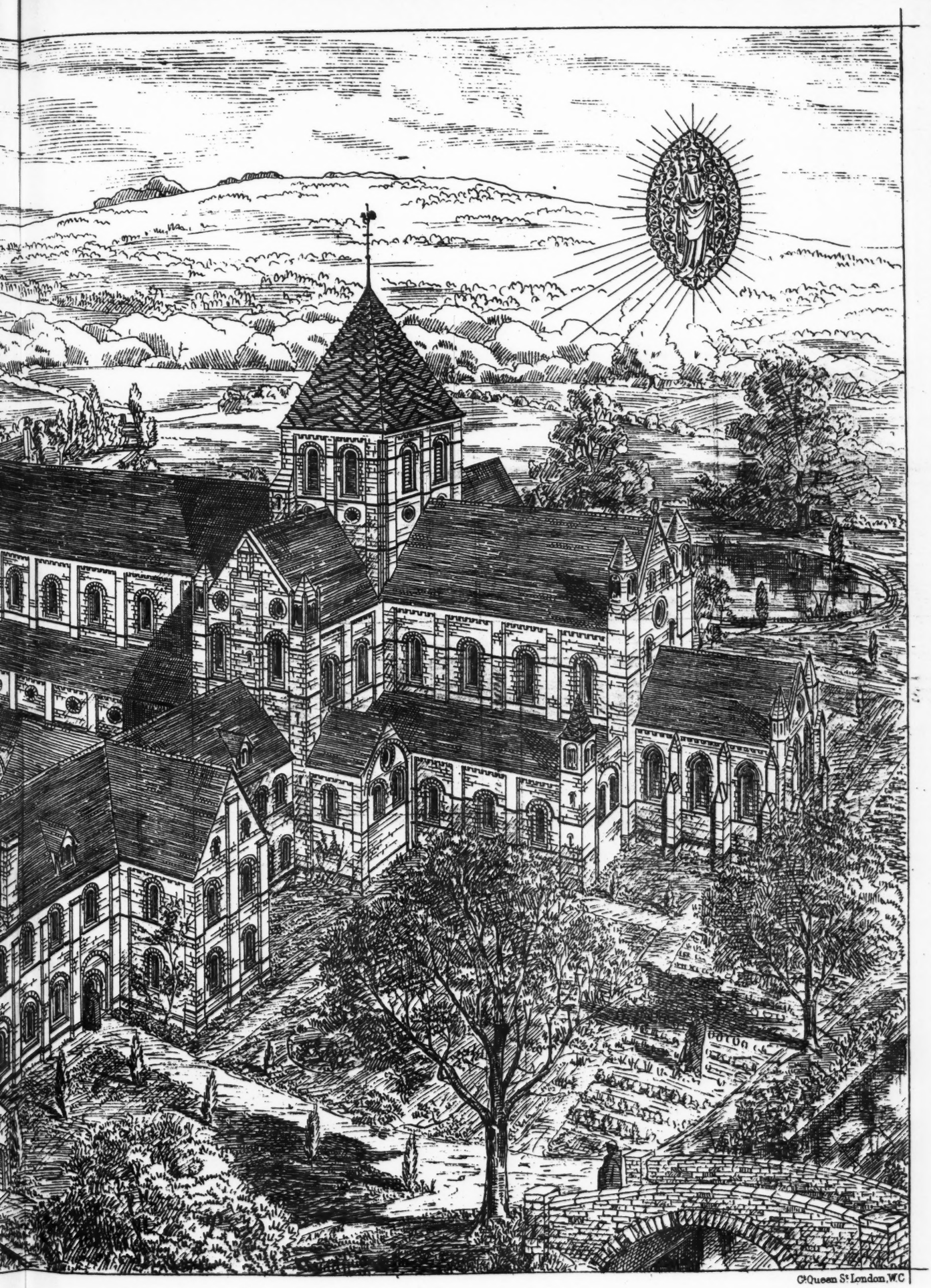


BVCKFAST: ABBEY: DEVON:

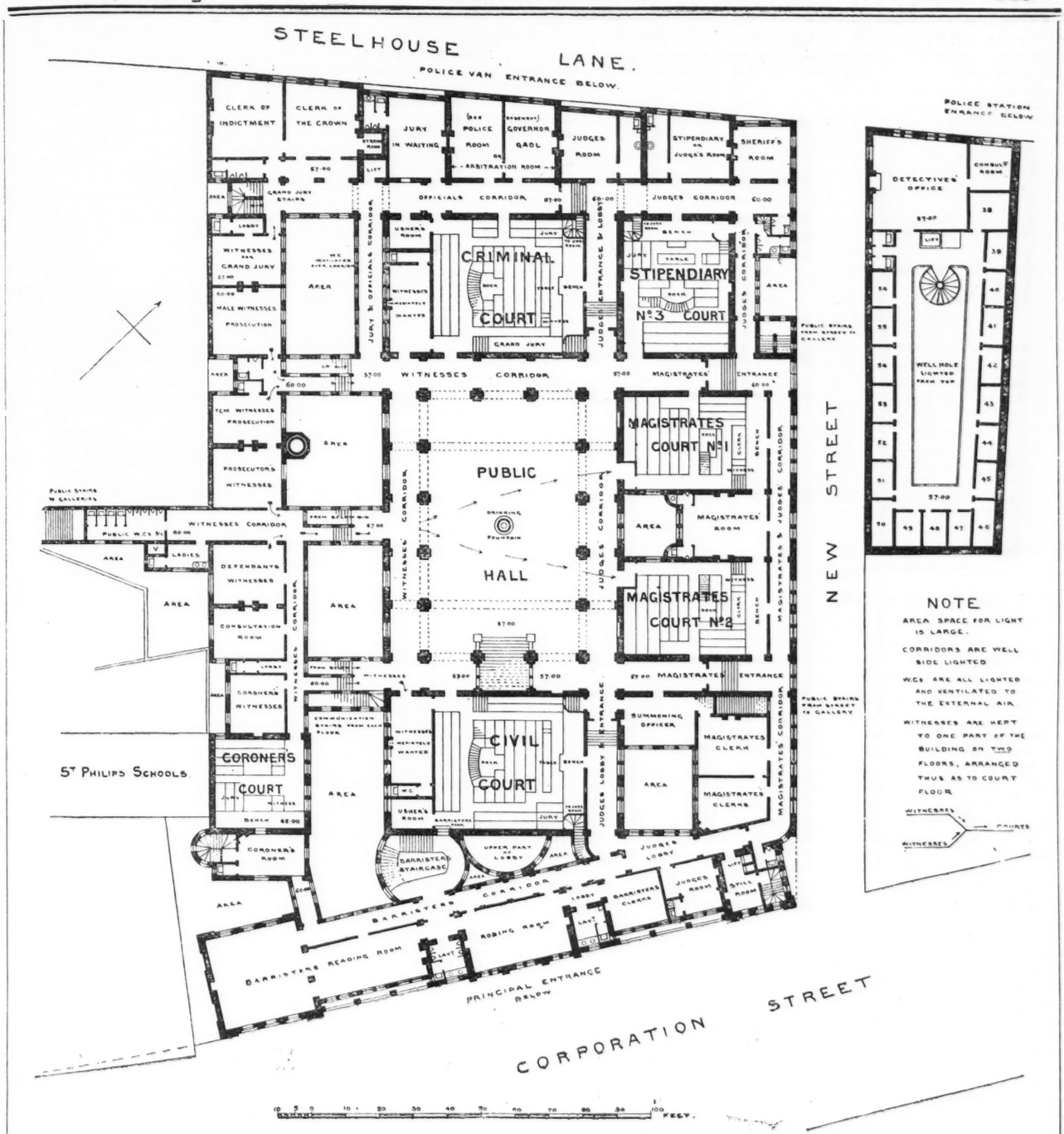
AS: BEING: RESTORED: AND: RE-BVILT:

MR. FREDK. A. WALTERS, A.R.I.B.A., ARCHITECT.

Wyman & Sons, Photo-Litho.



C.t Queen St. London, W.C



Mr. R. Stark Wilkinson's Competitive Design for the Birmingham Law Courts.—Plan.

COMPETITION DESIGN FOR BIRMINGHAM LAW COURTS.

The author of this design has endeavoured, by the plan, to obtain a large amount of internal area for light and air, so as to avoid the crowded state of the ground and basement floors, and the dependence for light on so many skylights and deck-lights as are shown in the original sketch-plans issued by the Corporation. Therefore, the plan now illustrated is treated in an entirely different manner, and the different departments are concentrated around a central hall, on a raised or mezzanine ground-floor, having entrance from Corporation-street by a broad corridor and a flight of steps under the Civil Court.

The public are given three distinct entrances from the side streets to the gallery level of the central hall and of all the courts, so that the central hall can be kept for officials, the Judges, magistrates, barristers, and witnesses; and these latter approach the rooms set apart for them by short flights of stairs, down and up, from the central hall and courts floor; and these stairs are in three groups, for the Civil, Criminal, and Magistrates' courts respectively.

The elevation is specially designed to give a monumental character to the buildings, and was proposed to be carried out in red brick and terra-cotta.

THE NEW MAIRIE, ST. DENIS, PARIS.

This, it may be remembered, was one of the buildings visited during the recent session of the Congress of French Architects. To the notice we gave of it in our *résumé* of the proceedings of the Congress, we may add here that the principal façade, shown in our view, is 49 mètres in width. The principal feature on the ground story is the arcade, the bays of which are filled up with wrought-iron work of very good workmanship. The central arch gives access to an interior court, the two others lead to the vestibules opening on to the main staircases, giving access to the Salle des Fêtes, the Salle des Mariages, the Council Chamber, and the Mayor's private apartments.

The first-floor story consists of seven bays, lighted by large windows filled with stained glass, and surmounted by a frieze decorated with foliage ornament; the windows being separated by piers carrying an entablature. The central window is surmounted by what would be described in French phrase as a "motif d'horloge"; and, indeed, that "motif" is a very convenient word when you have no other special name by which to characterise a feature. Below this are carved the arms of the town of St. Denis, with the famous device, so well known in French history, "Montjoye Saint-Denis."

Above the entablature is a stage of dormers, with pedimented windows, and above these rises a high roof with ornamental work in cut lead, crowned by an octagonal bell turret. The lateral elevations reproduce the main features of the fenestration on the first and second floors of the principal elevation.

The building will have cost, when entirely complete in every way, about 1,187,000 francs; not a large cost, considering the proximity of the site to Paris, of which St. Denis is practically one of the most prosperous and popu'ous suburbs.

BUCKFAST ABBEY, DEVON.

Some four years since, the site of this once important Cistercian abbey was purchased by a community of Benedictine monks from France. Almost the whole of the old monastic buildings had disappeared, with the exception of the four-storied tower at the south-west corner of the cellarium, supposed to have been the residence of the master of the lay brethren, while a modern residence had in 1806 been built on part

of the site, out of materials from the ruins. With the assistance of a restoration committee, under the presidency of Lord Clifford of Chudleigh, the monks, shortly after their arrival, took in hand the gradual reconstruction of the abbey strictly upon the old lines. The foundations of the whole were traced and opened out, and up to the present time the portions completed consist of the whole of the south side and part of the west side of the quadrangle, including the restoration of the old tower. The latter is of Perpendicular character, and is remarkable for having three latrines, one above another, in very perfect order. The other buildings appear from the remains to have been of Transition Norman character, and the new work has all been carried out in this style. The abbey is one of the most ancient foundations in Devonshire, and existed as a Benedictine house in the time of King Edgar, while in the time of Edward I. the monks boasted of holding some of their lands by grant of King Canute. In 1138 the house became Cistercian, and appears then to have been almost, if not entirely, rebuilt, through the munificence of Ethelweard de Pomeroy.

The uncovering of the foundations and the works of rebuilding and restoration have been under the care of Mr. Frederick A. Walters, F.S.A., architect, of Westminster, and the new buildings have been carried out by Mr. J. G. Stephens, builder, of Exeter.

THE VICTORIA HOSPITAL, BURNLEY:

CIRCULAR WARDS.

This hospital, opened the other day by H.R.H. Prince Albert Victor, as mentioned in our last, is of special interest on account of its circular wards. The following description of the building appeared in the *Burnley Express*:—

"The site, which is to the south of Briercliffe-road, surrounded by broad streets, is of an area sufficient to allow of the erection of complete administrative department, out-patients' department, six ward blocks of equal area, and a smaller block intended to be used as a children's ward. The administrative block occupies the centre of the site. The front portion of the central block contains on the ground floor secretary's room, house-surgeon's sitting-room and bedroom, matron's sitting-room, nurses' dining-room, linen-room, matron's store-room, and the operating-room. On the first floor are matron's bed-room, twelve nurses' rooms, bath-room, &c.; and the second-floor has four dormitories for servants. Connected with the block by means of a ventilating corridor are buildings of one story, comprising kitchen, scullery, pantry, wash-house, laundry, drying-closet, &c. There is a basement story almost throughout, with rooms for patients' clothing, store-rooms, larder, dairy, heating-chambers, storage for coals, &c., with a central communication to the upper rooms by means of a double lift. Spacious corridors connect the administrative and ward blocks. These corridors are glazed throughout, and it is possible to remove portions of the frames entirely in the summer months. The main wards are circular in plan, having an internal diameter of 60 ft., and accommodating twenty patients each. Overlooking each ward is a nurse's room and a scullery, and to the rear of these apartments are two separation wards for single patients. The bath-room, closets, lavatories, &c., are detached by cross-ventilated corridors. The general principle of the circular ward has so far been adopted in but two or three instances, the most notable being that of the Civil Hospital at Antwerp. None of these buildings have as yet been opened, and the actual results of the working of these institutions are looked for with the keenest interest. It is confidently expected that many of the difficulties and dangers arising from the known defects in even the later types of hospital construction will be avoided, that more perfect sanitary conditions will be attainable, along with more cheery surroundings for both patients and nurses. Those who have given most study to the subject are able to predict with tolerable certainty that there will be great improvements as regards the aëration of the several blocks, the softening of the internal draughts, and the maintenance of an equable temperature and the facilities for the regular admission of fresh air and the extraction of foul, the free admission of sunshine, and along with this a comparatively greater floor space and cubic area for each patient. In these wards, however, certain novelties of arrangement and construction, based upon the suggestions of Professor Marshall and others, will find their first expression in actual building. Of these features the sun-rooms are probably the most important. They are designed on the roof of each ward, being approached by a spiral staircase of easy gradient, constructed in the centre of each block. They are glazed all round, and outside the sun-room is a promenade some 12 ft. wide, making a circuit of the block. The roof of the ward is formed in wrought iron and concrete, with surface of rock asphalt. The wards, bath-rooms, closets, &c., are lined with glazed bricks, the joints being carefully made tight in Keene's cement. This material has been selected as offering the most impervious surface, and the ward floors for like reason are laid in Austrian oak, waxed and polished. The windows of the wards are glazed with British plate-glass, and are hung at the level of the impost. In the centre of each ward is a smoke-flue, jacketed with outer extraction flue. Access is gained to the soot-chambers at the foot of this flue by a subway running under the corridors. The subway contains all pipes for hot and cold water, steam, gas, &c., which are placed in a manner admitting of easy inspection. Facilities are afforded for cleaning out soot-flues, fresh-air trunks, &c., and the examination of sanitary fittings, without entering the wards. Calorifères are placed in convenient positions in these corridors, heated by coils, from which circulation-pipes are carried to baths and lavatories. Lifts and shoots are provided from the wards, so that coal, ashes, foul linen, &c., can be carried underground. The wards are heated by Snell's thermhydric stoves, by means of which warmed fresh air is introduced. This arrangement is supplemented by a method of steam heating. Radiators are placed in the small wards and corridors. Fresh air is admitted at two heights in the outer walls by Ellison's air-diffusers and Sheringham's ventilators, under control, as well as near the centre through the stoves, and the extraction takes place from the ceiling level next the staircase, trunks being connected with the central extraction flue. The ceiling is coved at the wall line and rises towards the centre to render the extraction appliances more effectual. The administrative block is heated in the main by open fireplaces, and is ventilated by means of Boyle's air-pump ventilators, one of considerable power being situated in the turret which surmounts the central block. The whole of the staircases is in stone. Having due regard to the soundness of the construction, the internal details throughout are of the simplest possible character, though in every particular ample provision is made for the efficient and economical working of the institution. The out-patients' department (consisting of dispensary, surgeon's room, ophthalmic room, and drug store) is situated to the rear of the western block to the north of the corridor, the corresponding portion on the east being reserved for the children's ward. The entrance lodge and mortuary are arranged to the street line on the north side, the former building being in two stories. All the buildings are substantially erected in stone, upon a bed of concrete covering the entire building site, and to a distance of 3 ft. beyond the walls. The works have been mainly carried out by local builders, namely, masonry, Messrs. Smith & Kippax; joinery, Mr. R. Brown; slating, Mr. Wm. Stanworth; plastering, Mr. J. Shuttleworth; painting, Mr. Wm. Aspinall; steam-heating, Messrs. Thomas Birtwistle & Co. The plumbing work has been executed by Mr. Richard Heyworth, Manchester. The cost of the building will be about 15,000*l*."

The architects are Messrs. Waddington & Sons, of Burnley.

On the occasion of the opening, Professor John Marshall, F.R.S., ex-President of the Royal College of Surgeons, gave an address on the advantages of circular wards, and said it was one of the proudest moments of his life to see in bricks and mortar, wood and machinery, an idea which had been floating in his mind for many years. Professor Marshall's views will be found in the *Builder* for Jan. 3, 1885. The subject was also very fully discussed at the Sanitary Congress at Leicester last year, and for a *résumé* of its *pros* and *cons*. we may refer our readers to Mr. Saxon Snell's paper and the discussion thereupon (see *Builder* for Sept. 26, 1885, p. 443, and Oct. 17, p. 549).

THE ARCHITECTURAL ASSOCIATION.

The first meeting of the present session was held at the Rooms, 9, Conduit-street, on the 22nd inst., Mr. J. A. Gotch, President, in the chair.

In connexion with the opening *conversazione*, held on October 8th, votes of thanks were accorded as follows, viz: to the Royal Institute of British Architects for the use of their rooms; to the ladies and gentlemen taking part in the concert; and to the exhibitors, Miss Chaplin, Messrs. Robinson, Elsey Smith, Vacher, R. P. Spiers, M. Scott, Shuffrey, Morris & Co., Longden & Co., G. Jackson & Sons, Woollams & Co., Knowles & Co.; Scott, Richmond, & Co.; Verity & Son; Laing, Wharton, & Down; Farmer & Brindley; A. Newman; Hart, Son, & Peard; Doulton & Co., Jeffrey & Co., Salviati & Co., and De Morgan.

Mr. E. C. Hanson was elected a member, and a list of fifty-eight other gentlemen were nominated for election at the next meeting.

The President next distributed the prizes to the successful competitors, a list of whom has already appeared in the *Builder*.* It was stated in the course of the distribution that a decision had not yet been come to in regard to the Sketch Book competition.

It was announced that in consequence of many corrections having been made in the "Brown Book" this year, besides the insertion of an additional amount of letter-press, it had not yet been sent to the whole of the members. Thereupon Mr. J. Douglass Mathews proposed that the consideration of the report should be postponed until the next meeting. Mr. C. R. Pink seconded the motion, which was agreed to.

The President then delivered his address, which we print on another page.

Mr. C. R. Pink, in proposing a vote of thanks to Mr. Gotch, congratulated him very warmly on occupying the honourable position to which he had been elected. They had all been prepared, by Mr. Gotch's previous utterances, to expect in his address literary grace and the power of a strong imagination, and in that hope they had not been disappointed. Indeed, he made bold to say that not only would the address be read with pleasure by the members of the profession, but that few of the preceding Presidents had written an address which would be read with so much interest by those outside their ranks. He believed it would be eminently readable by the general public, whose support and interest they were at all times anxious to enlist. With the remarks on architectural education, which was the most serious part of the address, he entirely agreed; but he would not discuss the matter, as his own views had comparatively lately been placed somewhat fully before the members.

Professor Kerr said it was nearly forty years since he occupied the presidential chair of the Association, and since then he had never failed to feel an interest in attending their prominent meetings, for old association's sake, and it was with extreme satisfaction that he saw the prosperity of the society so well continued and sustained. The chairman had given them an account of the young architect's prospects which might indeed discourage many, but he hoped this would not be the case. He proposed, therefore, to allude to the same subject from a different point of view, and that a thoroughly practical one. It was a remarkable thing that the building industry in England was, in point of magnitude, the second industry in the kingdom, agriculture alone being in front of it. The consequence was that no one with a head on his shoulders, and who had learned his business in an architect's office, need apprehend failure if he were prepared to do his work in some sphere or other in connexion with buildings and in the interest of the public. In the course of his life he had observed very great changes in the architectural profession, and within the last twenty years these changes had been almost as great as had been the important social changes which were astonishing every one. The outcome, he fancied, was that they were being rapidly Americanised, and though this might be a disagreeable reflection to some, yet it could not be helped. Nature would have its way, and that which was old-fashioned, severe, and exclusive was rapidly becoming extinct. Young men must therefore face the new ideas, and not look back to the old ones. These ideas were ideas of business,—commercial

* See p. 554, *ante*.

ideas. He was not a commercialising man, nor one who was in the habit of advising a disregard of the sentimental considerations of their noble profession, but he liked to look matters in the face, and to ask them to provide for the circumstances in which they would find themselves when they were older. As the building industry was so large and important, there were a great many quarters in which the young architect might direct his efforts, if one particular line of business did not happen to suit him or his connexion, not only in the arts, but in the sciences, and in the administration of affairs. The excellency of English architecture, in its peculiar lines, was attained and had been attained in the past by what some of them were disposed to sneer at, viz., the rough-and-ready discipline of an architect's office, even of those offices in which there was not much to do. English architects were thoroughly practical, as distinguished from those of France, who were more notable for exquisite grace in every touch of the pencil. The architect in this country combined, in a way no other professional man did, certain elements of practice which were, to some extent, antagonistic. He was an artist, a scientist, and a man of business. Art and science were just as antagonistic as, in their extreme forms, poetry and mathematics generally were. In the study of their profession they found art and science combined with business, which was an antagonistic element; but if they studied well these three branches,—art, science, and administration,—in the coming decade, when there would perhaps be difficulty in obtaining employment in a particular line, they would find half a dozen other lines open to them. The subsidiary arts were, at the present moment, rising to a position of marvellous prominence. Then with regard to science, it rested with the members of the Association and those whom they represented, to cut out the engineers in all their building work in the next generation. The engineers had plenty to do without interfering with the business of the architects. Why should not the latter, therefore, build the bridges and the great station roofs? It should be the aim of every cultured community to build in beauty. If this were so, why should such unsightly edifices be raised? The engineer could never accomplish an architectural design of grace, because he was not trained as architects were. In the next generation, too, they would find a variety of fields of administration in connexion with building matters, and into these channels many of them might be perfectly content to pass.

Mr. W. M. Fawcett (Cambridge) regretted that, although a member, he had never until then been able to attend a meeting of the Architectural Association. It had always been essentially an educational society, running on parallel lines to the Institute, of which it seemed to be the handmaid. Turning to the question of "Federation," he had never quite understood what was wanted, because, whenever he asked what it meant, he invariably received different answers to his questions. Some people spoke of federation as being simply unity and touch of the several societies, such as exchanging publications and the like, while others talked of it as going to the very depths of the matter, affirming that every society should be a branch of the Institute. The question was being well discussed, however, and he hoped that some practical outcome would be the result. The President's address struck him as saying exactly the right thing at the right time.

Mr. H. L. Florence said that when Mr. Gotch spoke of the means of instruction afforded by the different societies and institutions, it occurred to him that it might be possible to apply to "the veiled figure of the Academy" the practice of the Architectural Association, when the members combined and represented their wishes to the committee. Possibly, if the architectural students of the Academy were very much larger in numbers, they would be more powerful, and be able ultimately to make their influence felt. Professor Kerr seemed to speak somewhat disparagingly of the practical outcome of the foreign system of education, but he had just returned from a tour in France and Italy, where he had seen many new public buildings which had been carried out with the greatest success in practical matters as well as in point of design.

Mr. J. Douglass Mathews remarked that it was gratifying to find the presidential chair again filled by a gentleman living away from London. Though, of course, the members chiefly lived in the metropolis, the Association was now exercising its influence in the provinces, and the more its members were spread all over the country, the better for them in London. He was much pleased with the manner in which the address commenced, pointing out, as it did, to the young men the necessity of first finding out what they had to do, and then doing it. That was the great secret of the matter, and the more it was followed out the better they would acquit themselves, both to their own satisfaction and to that of their clients.

Mr. E. J. Tarver, in supporting the vote of thanks, made a few remarks on the prize awarded for notes on his lectures on the history of architecture. In awarding the prize for such a set of notes as those which had gained it this year, and also in former years, one saw what an immense advantage the student must have derived from the preparation of the notes, and from the selection of the numerous prints and tracings which illustrated them. He always recommended that the notes should rather be made from the books to which he referred his audience, than from the few words he had barely time to say on each of the vast subjects forming the entire course. Naturally these voluminous notes occupied more time than many students could afford to devote to the task, and, in future, it would be better to award the second and third prizes for the best notes taken at the lectures, and the first prize for the more laborious notes and illustrations taken from books.

Mr. Pink then put the vote of thanks to the meeting, when it was carried by acclamation.

The Chairman, in replying, said that he considered his election to the office he now held as a very great distinction, and hoped that in his hands the high record which the former Presidents had left would not be deteriorated. As to the discussion on the address, they must not suppose that he in any way counselled a relaxation of work on the part of those who were going to be architects. Nor was it his desire to abolish pupilage, and the present system of roughing it; but rather to supplement it, and in such a manner that human exertion would be called to the supplementary work as well as to that which already existed. With respect to the Institute and the Association going hand-in-hand, that was the desire of all concerned with the Association, to a certain extent. He believed it would always be their policy not to be in any way formally connected with the Institute, but to regard the Examination as an essential point, and to frame their work so as to meet it.

OBITUARY.

Mr. John Prichard.—We hear with much regret of the death of Mr. John Prichard, of Llandaff, a most painstaking and meritorious architect. He was in his sixty-ninth year, and unmarried. He was the twelfth son of the late Rev. R. Prichard, B.D., vicar-choral of Llandaff, and a pupil of Pugin. The *Western Mail* says he had held the position of Diocesan Architect for Llandaff for nearly forty years. In that capacity he superintended the restoration of many churches throughout the diocese, as well as the restoration of the cathedral church of the diocese, which he commenced in conjunction with his late partner, Mr. J. P. Seddon. The work was begun by restoring the east window of the Lady-chapel. When, afterwards, the general restoration was undertaken, Mr. T. H. Wyatt and Mr. Prichard were appointed joint architects, on equal terms. At the end of nine years the work was placed entirely in the hands of the latter. With some trifling exceptions, Mr. Prichard was responsible for the whole of the new work, including the design of the south-west tower. He remodelled the country residence of Mr. E. P. Shirley, Eatington Hall, Warwickshire, and this work, which was done in 1858, is considered of great merit, being referred to in Eastlake's "History of the Gothic Revival in England." His skill in remodelling is there spoken of thus:—"This is at all times a difficult task, especially when the building to be altered has either no architectural character of its own or possesses one at variance with the style it is expected to assume. Mr. Prichard, however, after making sundry alterations of a substantial kind, proceeded to clothe the whole structure with what Mr. Ruskin would call 'the new walled veil,' and perhaps it is not too much to say it is a walled veil Mr. Ruskin would have approved." Mr. Prichard was also the architect of the mausoleum of the Bute family at Cardiff Castle.

"FEDERATION OF ARCHITECTS."

Sir,—The list which you published last week [p. 612] has, so far as I am aware, made known for the first time the names of the gentlemen composing the "Architectural Federation Committee." This is the Committee who last April and again quite recently, issued to architects a circular headed "Federation of Architects" with a document attached for which signatures were solicited on the ground that they "represent all existing societies." In view of this definite statement of the circular, the list which you have published is, to say the least, remarkable, for the one flatly contradicts the other. I look in vain to this tardily-published list for the names of the Representative Members of the Royal Institute of British Architects, of the Architectural Association, and of the provincial societies. They are for the most part conspicuous by their absence.

As regards the Institute the facts are these:—

The President, the Vice-Presidents, and the members of the Special Federation Committee were on the 6th of April nominated as representative members of the "Architectural Federation Committee" without their consent or knowledge, and they were informed of such nomination by letters dated April 12th, signed by Mr. G. A. T. Middleton. The President, Mr. Christian, declined to accept the nomination in a letter addressed to Mr. Middleton, dated April 16th; the Vice-Presidents declined, I believe, on or about the same date; and the Federation Committee of the Institution declined by letter, dated May 5th; and yet I have in my possession a letter signed by the same Mr. G. A. T. Middleton, dated April 28th, consequently subsequent to the receipt of Mr. Christian's letter of the 16th,—in which it is stated that the Architectural Federation Committee "consists of the President and Vice-Presidents R.I.B.A.; President A. A.; Presidents of all existing provincial societies; the R.I.B.A. Federation Committee; and Messrs. R. Norman Shaw," and other names which it is not necessary I should specify. This letter was written by Mr. Middleton to a member of the Institute in reply to an application for further information as to the constitution and work of the Committee, and it was on the positive assurance contained in Mr. Middleton's letter that the President, Vice-Presidents, and Federation Committee of the Institute were members of the "Architectural Federation Committee" that he consented to become a member of it.

In the face of the declinatures to which I have referred from the representative members of the Institute, it has seemed to me very strange that the misleading statements published by the "Architectural Federation Committee" should never have been withdrawn or corrected, but it is incredible that this same committee should have quite recently re-issued their original circular, thereby reiterating and perpetuating the statement,—the accuracy of which you can now judge of,—that they "represent all existing societies."

Comment on such procedure is superfluous, but I may add, what is within my knowledge, that many of the signatures which have been obtained by virtue of the circular referred to were given in the belief, derived from its terms, that it had been issued with the sanction of the Royal Institute; and it may, I suppose, be assumed that all who so signed under a delusion will lose no time in extricating themselves from a false position by cancelling their signatures, and thus withdrawing their support from a committee who propose to use it in taking action antagonistic to the best interests of the Institute.

You are aware that the subject of architectural federation is now being considered by a committee of the Institute specially constituted for the purpose, and in order that the really representative character of this com-

mittee may be apparent, I venture to append, and to ask you to reprint, the names of the members. J. Macvicar Anderson.

9, *Conduit-street, W.*, October 27, 1886.

Royal Institute of British Architects' Special Federation Committee.

Edward I'Anson, F.G.S., President.
Alfred Waterhouse, Thomas Worthington, Arthur W. Blomfield, M.A. } Vice-Presidents.
J. Macvicar Anderson, Hon. Secretary.
William H. White, Secretary.
Charles Barry, F.S.A., Past-President.
Albert N. Bromley, President Nottingham Architectural Association.
Robert J. Goodacre, Leicester and Leicestershire Society of Architects.
John Honeyman, Glasgow Institute of Architects.
J. C. Moncrieff, Bristol Society of Architects.
Wm. Parslow, Liverpool Architectural Society.
George T. Redmayne, President Manchester Society of Architects.
Cole A. Adams, Past-President Architectural Association.
Charles Aldridge, Liverpool.
J. Wreghitt Connon, Leeds.
H. R. Gough.
Edwin T. Hall.
George T. Hine, Nottingham.
John Holden, Past-President Manchester Society of Architects.
J. Douglass Mathews.
Ralph Nevill, F.S.A.
C. Richard Pink, Winchester, President Architectural Association.
Thomas M. Rickman, F.S.A.
Professor T. Roger Smith.
G. Gordon Hoskins, President Northern Architectural Association (recently added by request of the Northern Architectural Association).

Sir,—We are instructed by the Committee of the Architectural Association to state, in reference to a circular issued by Messrs. H. Roumieu Gough and Edgar Farman, that the Architectural Association is not represented or connected in any way with the Architectural Federation Committee.

Herbert D. Appleton, Thos. Edward Pryce, } Hon. Secs.

9, *Conduit-street, W.*, Oct. 25.

SEWER VENTILATION AND STORM OUTFLOWS.

Sir,—Will you allow me to call attention to a practical method, in full operation, of dealing with the two very serious sources of danger to which reference is made in the second leading article, and the twelfth note, in last week's *Builder*?

As to the first, there can be no doubt that, as you justly remark, "the air in sewers, in contact with sewage, tends to rise into the atmosphere loaded with vapours and those gases from the sewage which are lighter than atmospheric air." And it may be added that, apart from the slight effect of barometric change, the intensity of the poison thus poured forth depends on the three elements of the foulness of the liquid, the temperature, and the time allowed for fermentation. But the product, whether emitted by one vent or by many, is mixed with the atmospheric air of a town, and more or less of it, in proportion to the size of the town, makes its way to the lungs of the inhabitants.

This great source of nuisance and of sanitary danger, to say nothing of cost, is quite removed by the iron process. When I set this process at work at Chichester Barracks, at the commencement of July, the smell arising from the ventilators and from the outfall of the barrack sewer was dangerously offensive. Within six hours of commencing the treatment, the smell was gone, and has not since been perceptible, by day or by night.

The difficulty as to the varying proportion of sewage, in dry and in wet weather, is met in the same way. The proportion of metallic iron employed is determined by the quantity of putrescible matter contained in the sewage. Whether a given quantity be diluted by ten or by a hundred gallons of water makes little difference. The treatment of a dry-weather flow is adequate for a storm flow, unless the latter bring down with it more foul matter. In any case, the dose of iron per minute may be doubled, trebled, or decupled, by the turning of a screw.

I do not propose, sir, to take up your columns by entering into any chemical or mechanical details. The question has advanced beyond the stage at which it is at all needful to do so. A pure effluent may be seen at this moment issuing from the barrack sewer at Chichester by any one who takes the trouble to visit the spot. The modest little apparatus which effects a transformation that looks little short of magic is not, of course, shown without proper introductions. But the only difficulty that will be experienced by the visitor as to the nature of the change effected will be in realising how foul the smell and the effluent were up to the end of last June.

Francis R. Conder, M. Inst. C.E.

ST. MARK'S PAVEMENT.

Sir, — As you have allowed my sketch-book diagram, referring to the pavement of St. Mark's, to appear in your last issue [p. 586], I will beg you to allow me briefly to refer to it,—this especially because the controversy on the subject survives in the columns of the *Times*.

The twelve immense slabs represented in my diagram are of Greek grey marble. They, or the blocks from which they were cut, were brought, at prodigious labour and cost, from Greece to Venice, obviously that, on the floor of St. Mark's, the precious material might lie intact,—a central feature of monolithic splendour. Their present crushed and wrecked condition proves incontestably that they were laid flat, and intended to remain so. That they were brought from Greece to be deliberately wrecked into fragments for undulation's sake is a proposition that passes the bounds of reason. Yet the late Mr. Street, speaking of these very slabs in the *Pall Mall Gazette*, March 27, 1880, said:—"Some of these are still unbroken and distinctly waved on the surface, while the whole mass has a regularly-arranged undulation." The fact is, that none of the slabs remain unbroken, and that the undulation is not regular in these slabs nor in any other portion of the floor.

In his "Brick and Marble Architecture" he stated that "It can hardly be thought that this undulating surface is accidental or unintentional, for, had it been the consequence only of a settlement of the ground, we should have seen some marks, too, in the walls, and some tokens of disruption in the pavement itself, *none of which, however, could I detect*." In face of the plain facts the words I have italicised are simply amazing.

The conclusion is past dispute, viz., that the twelve slabs were intended to preserve a flat surface, and this fact carries with it the whole question of the undulations. In connexion with this level panel of the designs, containing some 780 square feet, any idea of representing a wavy sea would have been ridiculous, — to say nothing of the geometrical patterns of the Opus Alexandrinum, surrounding the slabs, which alone are fatal to all idea of sea surface. As regards the confident reference to St. Sophia's, it is difficult to conceive anything more fatal to the contention made for the doctrine of symbolic undulation.

The floor of St. Sophia's is perfectly flat. It is throughout laid with marble flags, parallelograms in form, and placed in regular order. The floor has not a trace of symbolism of any kind whatever, save that the joints of the slabs,—the flooring being of Mahommedan origin,—are in lines aslant to those of the building, and are in the direction of Mecca.

If Mr. A. Street claims that his reference is to a pre-existing pavement of St. Sophia, and one of Christian times, some valid authority for its alleged wavy symbolism is due at his hands. Up to the present nothing but a bare assertion has been made, on this point of evidence, upon which the whole question has been virtually staked. The silence is very remarkable. Delta.

Oct. 27, 1886.

EDINBURGH MUNICIPAL BUILDINGS.

Sir,—The issue of another alteration to the site of the above, after two months have elapsed since the publication of the competition,—and competitors have not only had time to mature their designs, but also to commence the finished drawings,—is indeed an injustice, and one that should be withstood unanimously by all who are competing.

Speaking of my own design, the proposed alteration of site involves complete re-scheming; neither plans nor elevations can be modified to suit such a sweeping reduction.

It is the duty of competitors to place this matter before the Council (who, doubtless, are not aware of the amount of time and labour their new alteration will impose), and, like myself, to suggest the plans should be sent in to suit the original site, and the premiums awarded accordingly; and, as all competition plans are more or less modified, the successful competitor could re-arrange his design. It is more in justice that one should have this trouble than fifty or sixty, as will be the case, if all have to *re-arrange* their plans.

Alfred Broad.

*** It appears to us an unpardonable thoughtlessness to issue instructions for such a competition without having finally arranged the site. From a report of a meeting of the Council, given in the *Scotsman*, however, we gather that the time is to be extended.

RE COOPER'S COAL-LIMING PROCESS.

Sir,—My attention having this morning been directed to your review of Professor Wanklyn's book [p. 576, *ante*], "The Gas Engineer's Chemical Manual," I venture to send you copies of two papers which deal with the above subject, containing, as they do, statements concerning it which are based upon my practical experience in working the process continuously from October 31st, 1883, to the present time. The first settled home of the process was at Tunbridge Wells, and its decided success there has led recently to its adoption in other places; among others, Folkestone, concerning which important and modern gaswork I enclose a copy of an extract from the report of the directors to the shareholders, made at a general meeting of the company after four months' experience of coal-liming. The quantity of gas made at Folkestone in about five months may in round numbers be stated as being above 50 million cubic feet, and at Tunbridge Wells in the three years about 350 millions.

In both cases and in every case where it is being worked its success is decided, and there are none of the drawbacks which have appeared to you to be possible or probable. You are quite right in your statement as to increase of ash from limed coke, but this objection does not diminish the demand for it; the great bulk of the consumption of coke being for purposes not affected practically by a little additional dust resulting from ash, but, on the contrary, to a vastly greater extent a benefit is experienced by the coke consumer in the increased liveliness of combustion, rendering its use in open grates practicable and pleasant where ordinary coke could only be used by the aid of a little coal being mixed with it, or by a few jets of gas in the lower part of the grate; and, as a fact, it has been proved that the sale of coke has been favourably affected by its being made from limed coal.

Of course, if a large proportion of lime be used the objection to its use would be fatal, but the proportion being only about 2½ per cent., instead of being a drawback it improves its value.

The financial result is also decidedly favourable, inasmuch as the profits are increased practically to the extent of nearly a shilling per ton on the coals carbonised.

From a sanitary point of view, the process is a benefit which cannot be exaggerated, by the abolishing of the common nuisance occasioned by the frequent opening of the purifiers, and the exposure of their foul contents. Experience has proved that once a year is often enough to open a purifier, one at Tunbridge Wells having been opened only three times in three years, and is now being set to work again with *the same material*, which has been in daily use through that period, 350 million feet of gas having passed through it; and the average quantity of sulphur compounds found in the gas from Midsummer last to the 20th of this month was only 8·12 grains per 100 ft., although the public gas examiner, using another apparatus, about a mile from the works, reports the results obtained by him to be 10·24,—a quite unimportant discrepancy; and when these results were obtained, the oxide of iron in the first purifier contained 77 per cent. of sulphur.

I make no comment upon these facts, but have pleasure in furnishing them to you for your information. R. P. Spice.

21, *Parliament-street, S.W.*

Sir,—In the course of your kind notice of my book,—"The Gas Engineer's Chemical Manual,"—you inquire whether coal-liming does not increase the proportion of carbonic oxide in the gas.

My experiments appear to show that the carbonic oxide is diminished rather than increased. Thus, in Tunbridge Wells I found 5·0, 4·1, and 4·3 per cent. of carbonic oxide in the gas from the limed coal, in January, 1885. These figures are considerably below that which is generally found in coal gas.

J. Alfred Wanklyn.

THE BLOCK SYSTEM FOR WORKHOUSE PLANS.

Sir,—In the description of the new Workhouse for the Able-bodied Poor for the Holborn Union, published in your last issue [p. 588], it is stated that this is the first attempt to apply the "block system" to a workhouse.

I beg leave to inform you that the Lambeth Workhouse, designed by me, in conjunction with the late Mr. R. Parris, in 1869, and the new Workhouse for the Wandsworth and Clapham Union, designed by me in 1883, are both upon the "block system."

Thos. W. Aldwinckle.

Institute of Auctioneers and Surveyors of the United Kingdom.—A meeting of the provisional committee of this Institute was held at the offices, 57, Moorgate-street, E.C., on Wednesday last. Among other things it was resolved that the draft set of rules submitted should be printed and distributed among the members of the committee for discussion at their next meeting.

DRAIN-PIPE JOINTS.

Sir,—It may be interesting to your readers to know that the "Hassall's Patent Pipes," which have been used so extensively in the Bexhill-on-Sea sewerage works, have proved very satisfactory, and really are everything to be desired in the way of a safe joint for pipe sewers.

I had always a doubt in my mind that the Portland cement run into the joints would, in consequence of the liquid state in which it is used, shrink in course of setting and endanger the safety of the joint.

On receiving instructions from the engineer to the works, Mr. H. Bertram Nichols, C.E., of Birmingham, to cut out a length or two of the patent pipes (which had been laid six months) in order to fix a syphon, I looked forward with interest to the cutting of the joint, and was pleased to find that the Portland cement entirely filled the cavity, and the cement was found to be quite as hard as the pipes, forming one mass. The cement used was supplied by Messrs. Lee & Son, and answers well for running the patent joints.

Julian Downsborough,
Resident Engineer.

Bexhill-on-Sea, Oct. 25.

*** These pipe joints were fully described in our notice of the Sanitary Exhibition at Leicester last year (see *Builder*, Sept. 26, 1885, p. 417).

The Student's Column.

STONE QUARRIES.—XVIII.

LIMESTONES.

We shall now proceed to describe the principal limestone quarries in Great Britain, dealing more especially with those which send the material into the home counties in large quantities for building purposes. The freestones have been very extensively employed in the metropolis ever since large buildings began to be erected; and even to-day, in spite of so much opposition, important edifices are being constructed mainly of limestone or sandstone. We have repeatedly had occasion to remark that there is no particular objection to this, provided the material be carefully selected by persons competent to do the work; but we feel sure that this point is so often neglected that we are compelled to seek a material which, generally speaking, is of a much more durable nature, and which presents much less difficulty in the selection, and so we have advocated the more extensive use of granite for the most exposed parts of large buildings. At the same time, we are perfectly well aware that the elaborate mouldings and tracery executed with freestone could not be made of granite very economically. There can be no doubt that fine carvings and the like, no matter where they are to be placed, must still be in freestone, whether the money is forthcoming to enable them to be executed in the more durable material or not. Moreover, almost every one must agree that if fine carvings are made of granite they present a dull appearance, as a rule,—at any rate, they lack that lightness and elegance which is so characteristic of the white and cream-coloured freestones. Again, even if it be urged that the last-mentioned argument is a matter of taste, it cannot be denied that the black or white spots and streaks that will occasionally come to light on some prominent feature in a carving made of granite, are very serious drawbacks to its use for this purpose, and he who thinks otherwise must surely be devoid of all artistic sense and feeling. Such ornaments must always be made of freestone.

But, when we come to a question as to the material to be used in a large public building in the metropolis, we should feel inclined to advocate the use of granite for the foundations, walls, and the skeleton of the structure generally, especially on the exterior; freestones to be used for interior work, and minor embellishments on the exterior, care, of course, always being taken to blend the different tints of stone, so that they may harmonise with each other and with the whole. It will be obvious, however, that after all, a great deal depends on the kind of structure to be erected, as to the portions of the building that should respectively be made of granite and freestone, each ease standing on its own merits, so that it must be left in a great measure to the judicial mind of the architect concerned.

Portland Stone.

The Isle of Portland unquestionably furnishes some of the best kinds of limestone we have in the market. About the beginning of the seventeenth century Portland Stone began to attract public attention, and we find that in 1660 it was used to some extent in London. Inigo Jones restored a portion of old St. Paul's with it.

The present St. Paul's Cathedral and many of the London churches erected in the reign of Queen Anne were constructed with stone very superior to that now generally employed as far as regards durability. The quarries from which Sir Christopher Wren obtained the Portland stone which he employed have long since been deserted, the only reason assigned being that the merchants find that they cannot sell that stone on account of its being a little harder and thereby more expensive to work.* If this is actually the case it clearly shows the unwholesomeness of the competition. We suspect, however, that in addition to this, Sir Christopher had the stone carefully selected, and from a certain horizon, whilst at the present day the good name which the stone generally bears is a sufficient cloak to hide many inferior blocks of stone that are built up under the impression that all Portland stone is only of one quality. As a matter of fact, there are at least four different kinds of Portland stone in the island. Of these, two are quite indistinguishable from each other to the ordinary observer, although one will last for ages and the other merely a short time in the London atmosphere. The better quality is called "*Whitbed*" and the other the "*Basebed*," which has, unfortunately, been corrupted into "*best-bed*." The other two kinds of stone are known as "*Bastard Roach*" (Basebed Roach or Curf) and "*Roach*" (or true Roach).

The quarries are all worked with an open face, and all the stones are included in the upper oolite, with the following sequence (the newest bed being the first mentioned) :—

1. *Roach.* The colour of this stone is a very light brown. It is made up of a mass of fossils, cemented together with carbonate of lime. The original shells of the fossils have, in most instances, disappeared, leaving numerous cracks and cavities between the casts of the interior of the missing shells. This renders the stone quite unfit for delicate carvings and the like, though its toughness, strength, and weathering qualities make it useful for rougher kinds of work. We may mention that the roach is largely made of a fossil called by the quarrymen "screws" (*Cerithium Portlandicum*), which may be useful in distinguishing it from the inferior bastard roach, which it closely resembles. The latter stone does not contain this fossil. The roach is from 2 ft. to 3 ft. thick.

2. *Whitbed.*—This stone is almost white, but occasionally very light brown. This fact at once shows that it differs a little in composition, which receives further confirmation in that the grain is not uniform. Some of the blocks are too hard for carving, though others will take the most elaborate work. The stone is made up of fine oolitic grains (see the *Builder*, vol. l., pp. 695, 764), with very little shelly matter, cemented together with hard, crystalline calcite. If sections of the Whitbed and Basebed are cut, and examined under the microscope, the oolitic grains of the former are found to be more regular in outline, and to exhibit the onion-like structure much more characteristically than those of the latter. As might be imagined, the cementing material of the latter will also be found to be more earthy. The Whitbed is from 8 ft. to 10 ft. thick, and, taken as a whole, is decidedly the best Portland stone for general purposes.

3. *Bastard Roach.*—The bed known under this heading very much resembles Roach in appearance, in being a mass of fossil casts and cavities. The matrix, however, is earthy, and thus the stone is used principally for rough work in the locality. The dominant fossil is a little oyster. The thickness of the Bastard Roach varies considerably in the different quarries. In some it is represented by a thin band only an inch or two in thickness, whilst in others it is nearly 3 ft. It might be economically used for rough interior work in places not subjected to much wear and tear.

4. *Basebed.*—The tint of this stone varies from almost white to dark cream colour. It is well known in the market, especially amongst masons, who prefer it to the other kinds, because it is more uniform in texture, and does not contain so much shelly matter, being therefore worked with great facility. As we have pointed out, however, its weathering qualities are inferior, as a rule, to the Whitbed, and for this reason it should on no account be utilised for the exterior of city buildings, though we are afraid it is often so used. For country purposes it might be made use of externally, provided it is well seasoned. Its thickness varies from 5 ft. to 6 ft.

According to Professors Daniell and Wheatstone, the chemical composition of the different varieties of Portland stone is almost the same. It contains about 95 per cent. of carbonate of lime, 1·20 each of silica and carbonate of magnesia, and very small proportions of iron, alumina, and bitumen. Now, from this it would appear that no reliance can be placed in the selection of stone from its chemical composition alone; for, as we have seen, the different kinds of Portland stone weather in a diversity of manners, and yet are of nearly identical chemical composition. The secret of the stone lies in its structure principally, the best kind having a crystalline matrix, the inferior ones being more or less earthy. In selecting this stone attention should therefore be directed to the character of the matrix. It is not sufficient to ascertain that the stone contains crystalline matter, for this may occur, apart from the matrix, in the shape of shell fragments.

We have previously described the results of experiments on Portland stone in relation to its resistance to thrusting stress (see the *Builder*, vol. l., p. 560).

This material is largely used in England, and in some parts of Ireland. Examples in London, in addition to those already mentioned, are at the Horse Guards, the General Post Office, the Reform Club, Foreign Offices, and Somerset House. Examples in Dublin are,—the columns and portico of the Bank of Ireland, Custom House, founded in 1781, Royal Exchange, and the General Post Office.

Chilmark and Wardour Quarries.—These are situated about two miles and a half north-east of Tisbury, and one mile and a half west of Dinton stations, in Wiltshire. Geologically, the stone is obtained from the same horizon as that lastly described, namely, the Upper or Portland Oolites. The Chilmark are mostly underground workings, and the quarries are very old. The copper coins found amongst the *débris* date back 1,700 years. There are five different kinds of stone raised. The first of these is called the *trough* or *hard* bed, being of a light yellowish brown colour, with numerous crystalline fragments of shells. The stone is hard to work, and is used principally for steps, copings, sills, &c. Its hardness renders it peculiarly useful for resistance to wear, and it is very durable. The same characteristics, however, which cause it to be so durable are hindrances to its more extensive use from a pecuniary point of view,—the cost of working. The second is called the *pinney*, *green*, or *Scott* bed, and is the stone mostly employed for all kinds of building purposes, being known in London as *Tisbury stone*. It is of a light brown colour, tinged with green, and is a true oolite. When properly selected, according to position, it is a very durable limestone, easily worked. It has been extensively employed in recent years in Westminster Abbey in the chapter-house, south transept front, with all the pinnacles, the north porch and eastern recess of it, the western doorway, and several large pinnacles at the east end. The third is called the *white oolite* bed, which is of a cream colour, and coarser in texture. The fourth is the *Chantrey* bed, and the fifth the *garden* bed, of a very fine texture, is homogeneous in appearance, and of a cream colour. Its principal use is for carvings, &c., for which it seems well adapted.

The stone is cut with a wet saw, and works much easier when just quarried, as do most limestones of this class.

In chemical composition it unquestionably varies considerably. The following is the published analysis :—

Carbonate of lime	79·0
,, magnesia	3·7
Silica	10·4
Iron and alumina	2·0
Water and loss	4·2

The first thing that strikes one in looking at this analysis is the high percentage of silica. A microscopic examination shows that a considerable proportion of the trough bed is made of silica, both in the form of grains of sand, which form the nuclei of the oolitic spherules, and as chalcedony in the matrix. The dura-

* Guide to Museum of Practical Geology, 4th edition, p. 38.

bility of the stone is largely dependent on this last character. A similar examination of the pinney bed shows that silica is not so predominant, but nevertheless is in considerable abundance for a limestone, and the name chosen,—siliciferous limestone,—is an appropriate one.

The absorbing power of water attributed to the Chilmark stone is very low. The "Commissioners' Report," p. 47, states that one of the specimens did not absorb 1-36th of its bulk.

Mr. David Kirkaldy's experiments, on March 2nd, 1879, showed that the weight required to crush *one-foot* cubes was as follows:—

		Tons.
Chilmark,	trough bed	411·4
,,	pinney bed	136·6
,,	white oolite bed	125·5
Wardour,	Chantrey bed	139·0
,,	garden bed	280·9

The stone has also been used in Salisbury, Chichester, Truro, and Rochester cathedrals; Hampstead and Lambeth post-offices; Old Wardour Castle and Longford Castle, Wilts; and many other large edifices.

RECENT PATENTS.

ABSTRACTS OF SPECIFICATIONS.

12,805, Securing Knobs to Spindles for Door-locks. W. Green.

Instead of the screw as is generally used to fasten the spindle to the knob of the door, a peg or pin is inserted, and the top end of it is secured to a narrow spring, which fits into a recess in the knob. The spring closes around the neck, and the peg or pin passes through the hole in the neck into the hole in the spindle, and the knob is thereby made secure.

13,775, Smoky Chimneys. J. Cochrane, jun.

The friction of the cowl is reduced to a minimum, and a self-locking lubricator is also attached, which is silent in action. Increased wind bearance is provided, and also a socket and lubricator, cast in one piece. The cowl has simply to have the spindle entered into the socket, and it descends until the iron plate comes to rest on the snug, and it will then be turned round in any direction of the wind, and will then lock itself securely. When occasion arises for the cleaning of the chimney, the top part has simply to be raised slightly upwards, and by turning it round in the opposite direction it is unlocked.

14,023, Door-Knobs, &c. T. R. Paxton.

One end of the spindle is passed through the door, the fixed knob being on the other end; then two roses are put on at either end, and a clutch washer is fixed up close to the rose. The rose is then turned one-third round, which causes it to be propelled outward, and at the same time moves the clutch washer until it is engaged with the recess in the knob. Three screws are then inserted through the two roses and into the door, which secures all together. By this construction the knobs can be securely attached to the door without the aid of set screws and the adjustment obtained is very fine.

14,227, Joints for Pipes, Tubes, &c. P. Hoppe.

In this the joints have more flexibility, yielding to the inequalities of the ground without leakage, than by the ordinary system. One part of the joint is made externally in the form of a segment of a sphere and is attached to a flange on the adjacent pipe by means of a loose flange in the form of a ring, and by screw-bolts or studs.

14,579, Fire-Escape for High Buildings. W. Cooper.

A small crane is so arranged at the side of the window that the arm may be put out through the open window at the top. When not in use the crane, with the folding seat, folds back into a cupboard. Two pulleys, one at the end of the arm, and one over the folding chair or seat, serve for raising and lowering the apparatus. The chair is made with a back and seat hinged so that when not in use it folds up compactly, and immediately on being lowered the seat falls into position and the back is also fixed, so that the person lowered is not likely to fall out. It is especially useful in hospitals, asylums, and such institutions.

12,014, Gilding for Decoration, &c. J. Pratt.

This invention recently made public, is claimed to be a marked advance on the manner and method of gilding on glass. The glass is gilt with a solution at the back, then silvered and afterwards coated with a preservative composition. Any pattern may be cut on the glass by a sand blast, and the effect, though less costly than the old method, is said to be much finer. Lettering and patterns may be worked, and the gilding may be used in conjunction with any kind of painting, and can be applied to ecclesiastical and fine-art decorative work generally.

10,012, Decorative Woodwork. F. Mankey, U.S.A.

This relates to a machine for cross cutting the surface of the wood, for the purpose of producing an ornamental configuration. Rotary cutters are employed, by which means patterns in relief are cut upon the solid wood. Before this it was customary to affix the portions forming the relief separately securing them to the surface. The invention is adapted to the production of decorative or ornamental woodwork for walls, ceilings, furniture, &c.

NEW APPLICATIONS FOR PATENTS.

Oct. 15.—13,142, E. Eaton and Others, Electric Bell Indicator, &c.—13,148, T. Armstrong, House Drainage.—13,159, H. Price, Sanitary Dustbin.—13,165, C. Grimmett and J. Cook, Fastener for Windows, Casements, &c.

Oct. 16.—13,205, J. Denny, Terra Cotta.—13,209, W. Lutwyche, Mosaic.—13,215, H. Dalgety, Screws.

Oct. 18.—13,242, F. Flöring and K. Mayer, Fireproof Ceilings, Partition Walls, Buildings, &c.—13,278, C. Straub, Composition or Building Material.—13,284, F. Lyte, Pigments.

Oct. 19.—13,297, R. Greene, Hot Air Pipes for Fireplaces.—13,300, W. Bagshaw, Fasteners for Folding Doors, &c.—13,306, R. Scrivener, Brick and Tile Facing.—13,313, R. Reeves, Ventilating Drains or Sewers.—13,332, W. Browne and Others, Automatic Cut-off for Water Pipes.—13,348, H. Lake, Door Locks and Latches.

Oct. 20.—13,358, E. Murgatroyd, Bolts and Bars for Doors, &c.—13,364, R. Pardoe, Chimney Cowl.—13,395, F. Sage, Guards for Shop Windows, &c.

Oct. 21.—13,426, F. Baker, Chandeliers and Gaseliers.—13,432, G. Shorland, Stoves and Firegrates.—13,436, J. Harrington, Spirit Levels.—13,440, J. Parr and T. Kendrick, Fastenings for Windows.—13,451, J. Clark, Door Fasteners.—13,452, J. Hont, Fitting, Ornamenting, and Decorating Shops, &c.—13,468, G. Wickham, Siphon Cisterns.

PROVISIONAL SPECIFICATIONS ACCEPTED.

7,568, J. Hookham, Locks and Latches.—8,697, S. Johnson, Preventing the Entry of Sewer Gas into Dwellings, &c.—10,329, H. Cunningham, Drying Chambers for Bricks, Tiles, Portland Cement, &c.—11,004, P. Winn, Mounting Valves for Lavatories, Baths, &c.—11,151, E. Harris, Casement Windows, and Metal Frames for same.—11,250, S. Sparkes, Stoneware Socket Pipes, &c.—11,266, J. Jones, Hanging Sash Windows.—11,486, F. Shipton and J. Thorne, Washable and Sanitary Wall-hangings.—11,590, E. Banfield, Indicator for Water-closets, &c.—11,809, H. Wright, Regulating Water Waste Preventers.—11,877, W. Baughan, Electric Indicating Apparatus.—11,968, D. Taylor, Ranges.—12,359, J. Nichols, Fencing Posts.—12,526, R. Baird, Step Ladders.—11,062, W. Johnson, Hanging, Raising, or Lowering Window Sashes.—11,184, D. Saunders, Hinging Guard-beads to Window Sashes.—11,637, M. Macleod, Dry Glazing.—11,843, A. Moore and J. Lawes, Sheet Metal Roofing.—11,873, S. Jefferys, Chimney Tops.—12,746, P. Backman, Lift.—12,774, T. Hind and R. Lund, Grinding Paints, &c.

COMPLETE SPECIFICATIONS ACCEPTED.

Open to Opposition for Two Months.

15,587, F. Howcroft, Supporting Window Sashes.—15,608, D. & E. Glaister, Movable Partitions, Doors, Window Sashes, &c.—15,870, W. Lea, Hot-air Heating and Ventilating Stove.—15,997, E. Laporte, Ornamentation of Varnished Surfaces.—7,397, J. & B. Craven, Moulding Bricks, Tiles, &c.—0,149, H. Lake, Fastening and Securing Window Sashes, and Alarm Apparatus for same.—10,527, W. Alwood, Locks.—11,377, W. Bull, Roofing Tiles, &c.—179, R. Evered, Connecting Door-knobs to the Roses of same.—13,328, T. Smith, Cements.—15,185, T. Carder, Kilns.—15,436, R. Oates and J. Green, Gullies and Traps.—15,741, J. Buchanan, Locks.—15,751, W. Joy, Charging Cement Kilns.—11,371, H. Haddan, Veneering.

RECENT SALES OF PROPERTY.

ESTATE EXCHANGE REPORT.

OCTOBER 14.

By Debenham, Tewson, & Co.

Southampton—Eighteen plots of freehold land £1,083

OCTOBER 15.

By Debenham, Tewson, & Co.

Woking, near—Seven plots of freehold land 2,260

OCTOBER 19.

By Dowsett & Woods.

Mill Hill, Hendon—Copyhold houses, cottage, and nursery ground 1,220

By Debenham, Tewson, & Co.

Rotherhithe—Ground-rents of 17*l.* 10s., reversion in seven years 1,500

By H. Rutley.

Kentish Town—63 and 65, Clarence-road, 52 years, ground-rent 10*l.* 735

Homerton—1 to 9, Durham-grove, 7¼ years, ground-rent 10*l.* 10s. 200

Regent's Park—3, Cumberland Market, 38 years, ground-rent 20*l.* 355

23, Munster-square, 36 years, ground-rent 22*l.* 1s. 310

Kennington—100 and 102, Thomas-street, freehold 900

Camberwell—10 to 16, Brisbane-street, 77 years, ground-rent 15*l.* 350

By H. Bechervaise.

Leyton—1 to 12, Frith-terrace, 95, years, ground-rent 120*l.* 1,025

Leytonstone—9, 10, and 11, Grove-terrace, 95 years, ground-rent 12*l.* 270

336 to 356 even, Leytonstone-road, 95 years, ground-rent 110*l.* 3,425

Leyton—1 to 19 odd, Goodall-road, 95 years, ground-rent 60*l.* £2,270

48 to 62 even, Calderon-road, 95 years, ground-rent 48*l.* 1,585

1 to 7, and 17 to 23 odd, and 33 and 35, Frith-road, 95 years, ground-rent 62*l.* 10s. 2,285

By A. Richards.

City—75, Bishopsgate-street Without, freehold 2,050

Harrow, London-road — 1, 2, and 3, Woodside, freehold 2,295

Tottenham—Four plots of freehold land 600

Southgate—Two plots of freehold land 215

Two plots of freehold land 175

Enfield—1, Annandale-villas, and a plot of land, freehold 470

OCTOBER 20.

By Newberry & Co.

South Norwood, Station-road—The freehold erection known as the Public Hall 1,860

Selhurst-road—The residence Florencedale, 84 years, ground-rent 20*l.* 650

By Robinson & Sons.

Limehouse—80, Blount-street, freehold 220

Kingston, near—1 to 5, Hornsey-cottages, 89 years, ground-rent 18*l.* 110

By Phillips, Lee, & Davies.

Southwark—11, Gladstone street, 42 years, ground-rent 6*l.* 370

13, 15, and 17, Gladstone-street, 42 years, ground-rent 12*l.* 1,200

Caledonian-road—32A, Stock Orchard-crescent, 55 years, ground-rent 7*l.* 500

OCTOBER 21.

By Hards & Jenkinson.

Mile End—137, 139, and 141, Globe-road, and the erection called The Tabernacle, freehold 1,400

By A. Young.

Chelsea—28, Upper Cheyne-row, freehold 365

Camberwell—51 and 53, Lothian-road, and a plot of land, freehold 2,450

Plumstead, Conway-road—A plot of freehold land ... 180

By Temple & Moore.

Bow-road—8, Avenue-road, 46 years, ground-rent 3*l.* 240

Bromley-by-Bow—22 to 38 even, Empson-street, freehold 1,560

27, 29, 31, and 35, Marner-street, freehold 635

By Farebrother, Ellis, Clark, & Co.

Soho, Greek-street—The lease of the Three Greyhounds, term 21 years 850

Haymarket—56, Rupert-street, freehold 1,500

Moorgate-street—No. 2A, term 24 years, ground-rent 75*l.* 10s. 16,000

OCTOBER 22.

By Baker & Sons.

Barnet—Brook Hill Farm, and 3¼ acres, freehold ... 1,510

MEETINGS.

MONDAY, NOVEMBER 1.

Royal Institute of British Architects. — Opening Address by the President, Mr. E. I'Anson. 8 p.m.

Society of Engineers.—Mr. Percy Tarbutt on "Liquid Fuel." 7·30 p.m.

Clerks of Works' Association.—Mr. W. Lee on "Waterloo Bridge." 7·30 p.m.

Society of Antiquaries of Scotland.—Rhind Lectures in Archæology. V. By Professor David Masson. (Masonic Hall, Edinburgh, 8 p.m.)

TUESDAY, NOVEMBER 2.

Society of Biblical Archæology.—8 p.m.

Birmingham Architectural Association. — Annual *Conversazione.* Address by the President, Mr. F. B. Osborn, F.R.I.B.A. 7·30 p.m.

Liverpool Architectural Society. — Mr. Francis Fox, C.E., on "The Mersey Tunnel." (Royal Institution, Colquitt-street. 7 p.m.)

WEDNESDAY, NOVEMBER 3.

Society of Antiquaries of Scotland.—Rhind Lectures in Archæology. VI. By Professor David Masson. 8 p.m.

THURSDAY, NOVEMBER 4.

Builders' Benevolent Institution.—Thirty-ninth Annual Dinner: Carpenters' Hall, London-wall, Mr. Basil E. Peto, President, in the Chair. 5·30 for 6 p.m.

Royal Archæological Institute. — (1) Mr. W. Flinders Petrie on "The Discovery of Daphnæ." (2) Mr. A. Baker on "Architecture and Archæology." (3) Mr. E. Badait on "Roman Amphoræ." 4 p.m.

FRIDAY, NOVEMBER 5.

Architectural Association.—Mr. Aston Webb on "Pupilage." 7·30 p.m.

SATURDAY, NOVEMBER 6.

Association of Public Sanitary Inspectors.—Address by the Chairman of Council, Mr. G. B. Jerram. 7 p.m.

Miscellanea.

"The London Central Winter Fund of House Decorators and Painters."—By permission of Mr. Augustus Harris, the first ticket-benefit in aid of this fund will take place at Drury-lane Theatre on Monday, Tuesday, and Wednesday next, Nov. 1, 2, and 3. We are informed that the Fund was established in 1874 for the purpose of paying a benefit to its members when out of employment during the three months of winter, but owing to the severe strain upon its resources during the last two winters, the Committee find that even with the levy on the members they cannot meet their liabilities in the coming winter without making this their first appeal to the public. Tickets only will benefit the fund. They may be had of Mr. H. R. Swain, Secretary, and Mr. Price, Steward of the Decorators' Club, Howland-street, Fitzroy-square; and of the Secretary of the Committee, Mr. Edwin Walter Blades, 28, Longford-street, N.W.

South Kensington Sketching Club.—On Thursday, the 21st inst., the holiday sketches made by the members of this club (established in connexion with the National Art Training School) were exhibited at the South Kensington Museum, and the prizes were awarded and distributed by Mr. J. C. L. Sparkes, the principal, who delivered an address to the students. The club prizes were supplemented by others offered by Mr. Sparkes, Mr. Armstrong (Director for Art), and the masters, and were productive of a very large number of sketches, landscape and coast scenery forming the strongest section of the display. The first prizes were awarded as under :—Section A (past winners only),—landscape in oil, F. Stead ; ditto in water-colour, Miss Hull; ditto foreground, H. Rider; figure subject, Miss M. Clarkson; set of sketches in colour, H. Allport; ditto in black and white, F. Woodhouse. Section B (Students not in Section A),—landscape in oil, Mrs. Pearce; ditto in water-colour, H. Godfrey; ditto, foreground, H. Poulter; figure-subject, Miss Sybil Robinson ; set of sketches in colour, Miss Janet Lewis; ditto in black and white, Miss Julia Haywood ; still life, &c., in oil, W. Falkner; ditto in water-colour, Miss M. Woodward; architectural sketches, A. M. Poynter. Section C (past Students only), — set of sketches, Nelson Dawson. Special prizes: — figures, Jahn; shrub, Miss K. Beard; foreground plant, Miss A. Woodward; animals, Miss E. M. Ritchie; landscape, F. Suddards; architectural landscape, Miss K. Woodward; modelling, Tonelli; etching, H. Poulter; design, A. Fisher. A design for a frieze subject, "Music," executed by Mr. Weatherston, and which gained the prize in a competition amongst the students last July, was also exhibited on this occasion.

A New Dispensary and Relief Station at Battersea.—On a large piece of land adjoining the Latchmere Estate, in Battersea, covering an area of about 12,000 ft., a new dispensary and relief station are at present in course of erection for the Guardians of the Wandsworth and Clapham Union. The buildings are intended for the relief of the poor belonging to the Union, residing in East and West Battersea. The Flemish style of architecture has been adopted. The west and principal frontage faces Home-road. It is nearly 90 ft. in length, and 40 ft. in height, containing one lofty floor, with dormers in the roof of a large central hall, the roof having hammer-beam principals and moulded ribs. The roof in the centre is surmounted by an ornamental turret, octagonal in form, rising to a height of nearly 70 ft. above the ground level. The turret encloses one of Boyle's air-pump ventilators, 30 in. in diameter. The elevation is faced with Lawrence's cut and moulded red brick, the window heads and sills being in red Corsehill stone. The entrance in the centre is surmounted by a step gable, the north and south ends of the frontage containing the relieving and medical officer's business apartments, being also surmounted by step gables. The roof is covered in with Broseley tiles. The buildings are carried to a depth of 130 ft. eastward, the east frontage being in Latchmere-road. This portion of the structure contains the medical and relieving officers' residences. Mr. T. W. Aldwinckle, of East India-avenue, is the architect; and Messrs. W. G. Wyatt & Co., of South Norwood, are the contractors. Mr. Edmund T. Larkin is clerk of the works.

The Preservation of Ancient Monuments.—On Monday last the annual meeting of the Shropshire Archæological and Natural History Society was held. Mr. Stanley Leighton, M.P., occupied the chair, and read an interesting paper on "The Preservation of Ancient Monuments." He stated that the ignorance of people as to their own hereditary books, pictures, manuscripts, and buildings of interest was extraordinary. Many of the most polished, and in some instances educated, men were surprisingly confused in their ideas of antiquities. He was walking through Westminster Hall the other day with one of the most distinguished leaders of the Liberal party, when he looked up to the great roof and stated that it was the work of William Rufus; but he was quite unaware that Richard II. rebuilt it. He was, therefore, just three centuries wrong.

The Surveyors' Institution.—The first ordinary general meeting of the session will be held on Monday, November 8th, 1886, when the President, Mr. W. J. Beadel, M.P., will open the session with an address.

Proposed International Exhibition of Art, Science, and Industry, at Saltaire.—This exhibition is to be opened on the 3rd of May next, and is being promoted by the Governors of the Salt Schools in order to raise a portion of the funds required to defray the cost (12,000*l.*) of the new Schools of Art and Science now being erected as a memorial to the late Sir Titus Salt, Bart., the founder of Saltaire. The originators of the movement for a public memorial at Saltaire contemplated the erection of a statue of the deceased baronet, but in October, 1885, on the occasion of the delivery by Professor Seeley of his address as President of the Salt Schools, Mr. Titus Salt threw out a suggestion for a more useful form of preserving his father's memory. It was explained that the accommodation for the teaching of science and art in the present buildings had become inadequate to the growing needs of the surrounding population, and Mr. Salt advised that the memorial should take the form of new Schools of Art and Science, to be erected on a site adjoining the Institute. This suggestion at once found favour. The building of the schools was begun directly, and it was intended that they should have been completed during last winter, and that an Exhibition or "Palace of Delight" should have been opened early in the past summer. But the unusual severity of the winter seriously retarded the erection, and the project had to be put off for a year. But, taking advantage of opportunities gained by the delay, the Exhibition will be larger in scope and more international in character than was at first intended; while even the new Schools of Art and Science themselves have undergone extensive alterations. The school buildings themselves will provide part of the accommodation for the Exhibition, and ranges of temporary buildings will be provided in addition. Rapid progress is being made with the school buildings, and the roof is now nearly finished. Messrs. W. & R. Mawson (Bradford) are the architects; and the contractors are Messrs. Wm. Ives & Co. (Shipley), masons' work; Messrs. T. Obank & Sons (Idle), wood work ; Mr. S. Rushworth (Shipley), plumbers' work; Messrs. Hill & Nelson (Bradford), slaters' work; Mr. Dixon (Bradford), plasterers' work ; and Messrs. Bagnall & Quarmby (Shipley), painters' work. Mr. William Fry, Saltaire, is the secretary and general manager of the Exhibition.

Patent Law.—The inaugural meeting of the present session of the Inventors' Institute was held on Monday evening last at their offices, Lonsdale Chambers, Chancery-lane, when Admiral Selwyn read an address on "The Practical Results of the Present Patent Law, and the Changes to be pressed for in future Legislation," in the course of which he pointed out that there has been no real change in the total fees to be paid for a patent, which still remain at the unreasonable sum of 150*l.* He maintained that a 10*l.* fee, paid once for all, or 5*l.* on grant of provisional specification and 5*l.* on completion, would be amply sufficient for all the expenses of the Patent Office,—and, indeed, that with patents multiplied to the extent of threefold their present number, as he believed they would be, the Office would have a revenue of half a million a year, instead of 73,000*l.* But the main point to which the Institute had been devoting its attention was to secure a basis on which a patent would become an actual property. One essential requirement in the direction of reform was that the disgraceful clauses in the present Act providing that the State might rob the patentee should be at once struck out; and a second requirement was that the examination before granting the patent should be as complete as possible, so that the title established by a patent should, as far as could reasonably be expected, be equal to that of any other property. A discussion followed, in which several of the speakers pointed out that the previous examination was much more efficient in the United States and in Germany than in this country, and that the cost of a patent in the United States lasting seventeen years was only 7*l.* 10s., whereas in this country the inventor was charged 150*l.* for what amounted to little more than permission to go to law.

Surveyorship Appointment.—The Hove Commissioners have appointed Mr. H. H. Scott as Town Surveyor in the place of Mr. Ellice-Clark, who has resigned. Mr. Scott has filled the office of Assistant-Surveyor for upwards of two years.

The Builders' Benevolent Institution.—As will be seen by reference to our list of meetings, the annual dinner of the Builders' Benevolent Institution takes place next Thursday at Carpenters' Hall, London-wall. We trust that it will be the occasion of a considerable addition to the funds of the Institution.

Manchester Sewage Scheme.—We are informed that at a meeting of the Manchester City Council, held on the 27th inst., Mr. Bailey Denton, of the firm of Messrs. Bailey Denton, Son, & North, Palace-chambers, Westminster, was selected as consulting engineer to advise upon the scheme about to be carried out for the sewerage and sewage disposal of the city.

The Mining and Engineering Exhibition at Newcastle-upon-Tyne.—As will be seen by an advertisement in another column, the Executive Council, at the request of several large exhibitors, has consented to enlarge the buildings of the Exhibition. The time for making applications for space has been finally extended to November 30th.

Turners' Company Exhibition. — The eighteenth annual exhibition of specimens of hand-turning, held under the auspices of the Turners' Company, has been open the last two or three days in the Ball-room of the Mansion House. The exhibits were divided three sections, viz., wood, ivory, and pottery. The judges in the wood and ivory sections awarded the silver medal and freedom of the company, and four volumes of Holtzapffel's "Turning and Mechanical Manipulation," to T. Lee, Denzell-street, Lincoln's Inn-fields; and the bronze medal, 4*l.* 4s., and vols. iv. and v. of Holtzapffel's works, to George Adams Alderton, of Clifton-street, Brighton. The first prize in the apprentices' section was given to James Hopgood, of Maidstone, Kent; and in the amateur section a certificate of merit was given to James E. Galliford (Inland Revenue), of Walthamstow, Essex. Other prizes were given for the best piece of pottery thrown on the wheel in one piece without joints, and not afterwards shaved, turned, or glazed, for pottery thrown and turned by one person, and for the best piece of turned or shaved pottery ornamented by the runner or hand tool.

The Proposed New Law Courts at Birmingham.—A deputation from the operative bricklayers' societies of Birmingham waited upon the Mayor at the Council House last week. The deputation consisted of Messrs. W. Nash (secretary), J. Freeman, W. Bevan, and W. James. They stated that, while they were glad to hear it had been decided to build the new Law Courts in terra-cotta, they thought it desirable to bring before the Mayor the views of those they represented on the question of the material. They strongly urged, from their personal experience, the advantage of terra-cotta as a building material, stating that it was as desirable as stone, and possessed many advantages over that material. They urged that several of the statements made by the stonemasons, who had previously seen the Mayor, were greatly exaggerated, and specially instanced the allegation that as much as 30,000*l.* would be lost to the labour of the town if stone were not used. With reference to this subject they represented that the stone was quarried outside the borough just as terra-cotta was manufactured, and that stone was generally brought to the site of the building more or less worked. They considered that the argument as to labour was in favour of the use of terra-cotta rather than stone, the bricklaying class being much larger than that of the stonemasons, and stated that there were at least four bricklayers in Birmingham to one stonemason, and that each bricklayer was served by a labourer, while one labourer served as many as nine masons. The Mayor, in reply to the deputation, said that the question of material had been settled, not in the interests of any one class, but in that of the ratepayers at large, and with the view of obtaining the best building at the least cost. [In reference to the statements made by the spokesman of the bricklayers, Mr. Joshua Farr writes to the *Birmingham Gazette* to say that the Master Builders' Association of Birmingham "find it much better to have the stone worked in the town; at least in all the buildings done by them in the town the stone has been worked in the town." As to the statement that one labourer was sufficient to supply nine masons when fixing stone, Mr. Farr says, "there is always one labourer to every mason fixing stone, and in most instances two or more labourers."]

Wallsend (Northumberland).—The new Church of St. Luke, Wallsend, was consecrated on the 18th inst. by the Bishop of Newcastle. The church occupies a site in Station-road, and when completed will comprise a nave 72 ft. long by 25 ft. wide; a chancel, 37 ft. 6 in. long by 20 ft. wide; a north aisle, 12 ft. wide; a south aisle, 14 ft. wide; south transept, organ chamber, vestries, and a tower and spire about 140 ft. high; and the total cost, excluding the site, will be about 6,000*l.* Owing to the lack of funds only a portion of the work has been executed, at a cost of a little over 3,500*l.* The nave and aisles, with western porch, and the base of the tower, are the portions which have been first built. The style of architecture adopted is Early English. The church is built of local stone, and is plastered inside and relieved with stone dressings. Neat open benches are provided sufficient to seat 480 people. The pathways of the nave and aisles are paved with red and grey blocks of spar-cement,—a new form of pavement, which has been made by Messrs. W. B. Wilkinson & Co., of Newcastle; and this pavement is the gift of Mr. Wilkinson to St. Luke's Church. The architects of the church are Messrs. Oliver & Leeson, Newcastle. Messrs. N. & R. Reed, Newcastle, have been the contractors for the masonry and joiner work; Messrs. Sowerby, Gateshead, for the glazing; Messrs. Emley & Son, Newcastle, for the heating apparatus; and Mr. Laidler, Durham, for the chandeliers and other gas fittings; and all the works have been executed under the supervision of Mr. George Relph, clerk of the works.

Public Conveniences. — On Friday, the 22nd inst. the underground water-closets and urinals at Ludgate-circus and Eastcheap were opened by the Chairman and Members of the Corporation of London. Both urinals are built underground, Eastcheap having four water-closets, Ludgate-circus five, and each nine urinals. The brickwork is lined with Wortley glazed brick, having a coloured dado; the doors and frames are of pitch-pine, sized and varnished. The water-closets are lighted up with a lamp over each door fixed on an ornamental iron scroll. The structure at ceiling line is also lighted by a Sugg's sunlight. This is intended for ventilation as much as for lighting purposes. The roofs are formed with wrought-iron girders, the spaces filled in with Hyatt's lights with cast-iron open grating on the outside which answers two purposes, first for ventilation and secondly to take off the water from the roof into gutters underneath. The urinal at Ludgate-circus is built between the two Fleet sewers and discharges itself into them by means of a penstock and tide flap. There is also a tide gauge fixed in a reservoir which is underneath the building, and which will act as a store chamber at any time the sewers are charged. The plans were designed by Col. Haywood, the engineer, and the work was erected under the superintendence of Mr. F. Nicholson, the clerk of works.

Bombay Railway Terminus Buildings. In connexion with these buildings, which we illustrated last week, it may be mentioned that Messrs. Lund & Blockley, the makers of the large clock and carillons at Bombay University, have just manufactured and shipped three clocks for the Bombay Terminus of the Great Indian Peninsular Railway. The first clock shows the time on two skeleton iron dials 10 ft. 6 in. in diameter, glazed with flashed opal glass. These dials, which are fixed on the south screens in the station so that the time can be plainly seen over the whole of the platforms, are 116 ft. apart, and the two sets of hands are driven by one movement placed midway between the dials. The second clock, which shows the time on one dial 3 ft. 6 in. in diameter, is fixed in the first and second-class booking-office and waiting-hall. The third shows time on a similar dial 8 ft. 1 in. in diameter fixed in the court-yard under the large dome.

Architectural Antiquities of Winchester. The Hampshire Field Club finished its second season on the 20th inst. by a visit to Winchester, where they visited the County Hall (the ancient hall of Winchester Castle), upon the architectural history of which Mr. C. R. Pink, F.R.I.B.A., read an interesting paper. The party afterwards visited St. John's Church, in the Soke, which was described by Mr. Pink as the most interesting church in Winchester. St. Peter's Cheesehill and the Cathedral were also visited.

Liverpool Engineering Society. — A paper, entitled "Dredging at Whitehaven Harbour," by Mr. John S. Brodie, engineer to the Town and Harbour Trustees of Whitehaven, was read by the hon. secretary (in the author's absence), on the 20th inst. A short description of the harbour of Whitehaven, as regards the silting of the entrance to the harbour and the means adopted to keep the silt down, was given, and the opinion of the original engineer of the harbour works, the late Sir John Rennie, P.P. Inst. C.E., as stated in his book on "Harbours," was quoted, as showing that that eminent harbour engineer fully foresaw the difficulty of preventing deposit of silt in harbours such as Whitehaven. The three systems of "ladder" dredging, "grab" dredging, and lifting sand from the harbour by means of steam cranes and manual labour were then described in detail as carried out at Whitehaven, analysed, and compared; and the method of improving the fairway to the harbour by means of induced tidal currents and the resulting advantages pointed out. The paper concluded with a few general remarks as to the most efficacious and economical means of preventing deposits in close harbours situated on exposed alluvial coasts.

The Atmosphere of the Underground Railway.—Our readers will remember what happened years ago when attention was directed to the dangerously impure state of the atmosphere in the tunnels of the Underground Railway. The condition of matters has been considerably improved since then, but it is still far from being satisfactory. The complaints of travellers who suffer in various ways from the highly carbonised condition of the air are very numerous, and, in some instances, the effects produced have been serious. Surely the time must come when steps will be taken to effect a thorough reform. We have more than once urged that a proper trial should be made of Dr. Neale's "Chemical Lung." It is beyond question a very valuable agent for the purification of air, and we cannot doubt that if the trains were provided with this apparatus there would be a great diminution of the evil to which we refer. Dr. Neale has, we understand, expressed his willingness to superintend experiments with a view to demonstrate the efficacy of his invention. We counsel the companies to embrace the opportunity before matters reach a pass which will revive the very damaging controversy of years ago, when a contemporary raised a storm which, while happily it blew away the worst of the foul gases, was found very difficult to quiet down.—*Lancet.*

The Kennedy Building Estate at Barking.—On Monday evening Messrs. Baker & Sons offered for sale, at the Bull Hotel, Barking, the second portion of the Kennedy estate, containing about 28 acres, and which has been laid out for the erection of about 300 houses and shops. The property is situated about a quarter of a mile from the Barking railway station, on the main road to Rainham, and is intersected near its northern boundary by the London, Tilbury, and Southend Railway. The number of lots submitted was eighty, of which about twenty were shop lots. Mr. Baker, in offering the property, referred to the great demand for houses in the vicinity of all the suburban stations of the London and Tilbury and the Great Eastern Railways. All the plots offered were sold, those in a newly-formed thoroughfare called Sparsholt-road, having frontages of 18 ft. and a depth of 100 ft. each, realising from 12*l.* to 15*l.* each, whilst those facing Mora's-road, the main high road between Barking and Rainham, and several shop plots in the same road, were sold at prices varying from 18*l.* to 24*l.* each. The total proceeds of the sale amounted to about 1,100*l.*

English Paintings Abroad.—Herr G. C. Schwabe, who for a number of years resided in England, has just presented his native town, Hamburg, with a collection of oil paintings, 128 in all. The collection includes numerous works by several leading English artists, amongst whom may be mentioned Sir Frederick Leighton, Turner, Landseer, Henry Woods, Philip H. Calderon, and W. C. Orchardson. Five large rooms have been allotted for the paintings in the Art Hall of the above-mentioned city, where they are now being arranged, under the direction of English artists. In acknowledgment of the gift the Hamburg Municipal Council have passed a resolution conferring upon Herr Schwabe the distinction of honorary citizen of that free town.

An Improved Saw Guard.—The *Aberdeen Free Press* states that Mr. Ralph Willoughby, Superintendent of the Industrial Schools, Newcastle-on-Tyne, has patented an improved saw-guard, in which the part of the saw projecting above the table of the bench is covered by a hood, which is supported by a rigid frame attached to the bench, or in any other convenient way, so as to allow of the height of the hood above the bench being adjusted to suit the material to be operated on. From the hood is hung,—by hangers or suspenders,—a shield, consisting of two plates, one on each side, and of sufficient depth, when resting on the bench, to conceal the part of the saw above the bench which is not covered by the hood. The under edges of these plates at the entry side are slightly curved in order to facilitate the insertion, under the shield, of the material to be sawn. The shield is suspended from the hood in such a way that it is raised when the material is pressed against the ends, and thereafter is allowed to fall back to its original position when the material is withdrawn. The shield plates are not connected, so that, if the work to be done allows it, one plate only is lifted, and therefore the saw is exposed only on one side. When the operator moves the material to be sawn along the bench, it first comes into contact with the shield, which it moves forward and upwards upon its suspenders. The operating part of the saw is thus exposed, and the material is allowed to pass along, under the shield and hood, to be sawn. When the material is removed, the shield returns automatically by its weight to its normal position of covering the saw.

A New Method with Cement. — M. Vallin, the Managing Director of a French Cement Works (the Gypserie de la Gare), has adopted, we learn, a new process of manufacturing cement. In order to avoid the disadvantages arising from the unequal burning of clay or stone, M. Vallin crushes the material before placing it in the kiln instead of after. By the ordinary method it is very difficult to obtain a thorough burning of every piece of clay or stone; sometimes the surface is burned too much, and the centre too little, or not at all. In the process as carried out at M. Vallin's works, a crushing-mill breaks the material into small pieces, which are automatically conveyed to a vertical cylinder mill, whence they issue ground to powder. This is in turn again automatically placed on sieves which sift it into pans or kilns heated by gas. A series of inclined plates, having a gyratory motion, agitate the powder in each of the pans, and thus submit every particle to the action of the heat. A mechanical arrangement conveys it to sacks, which a man fills as the powder arrives. The whole operation is thus continuous and automatic. The new material is known as Paris cement, and its price in France is from 2s. 6d. to 5s. per cwt.

The Proposed Cathedral at Liverpool.—The *Liverpool Daily Post* of Tuesday last says that the Bishop of Liverpool has received a communication from Mr. Ewan Christian explaining the delay that has occurred in reporting upon the three designs sent in to the committee who have charge of the matter. The letter ends as follows:—"I am happy and very thankful to be now able to say that I have got back into my usual condition of health, and shall lose no more time than is absolutely unavoidable in bringing my labours on the plans to a termination."

Freehold Building Land at Walthamstow.—On Thursday evening, Oct. 21, Messrs. E. E. Croucher & Co. sold by auction, at the Coach and Horses Tavern, St. James's-street, Walthamstow, a number of plots of freehold building land, with frontages to Markhouse-road and South Grove-road, the whole forming part of the Camden House Estate. There was a very large attendance, and the lots realised from 40*l.* to 90*l.* per plot, according to size and situation.

The Superintending Architect, Metropolitan Board of Works.—The Works and General Purposes Committee of the Board have resolved to present a report stating that the Committee have, in accordance with the resolution of the Board of the 2nd of July last (No. 5), considered the applications for the office of Superintending Architect, and seen all the candidates who have presented themselves, are not prepared to select and submit to the Board six candidates whom they consider suitable.

PRICES CURRENT OF MATERIALS.

TIMBER.	£.	s.	d.	£.	s.	d.
Greenheart, B.G. .....ton	6	10	0	7	0	0
Teak, E.I. .....load	9	0	0	14	0	0
Sequois, U.S. .....foot cube	0	2	4	0	2	7
Ash, Canada ....load	3	0	0	4	10	0
Birch ,, ...	2	5	0	3	10	0
Elm ,, ...	3	10	0	4	10	0
Fir, Dantsic, &c.	1	10	0	4	0	0
Oak ,, ...	2	10	0	4	10	0
Canada	3	0	0	6	0	0
Pine, Canada red	2	0	0	3	10	0
,, yellow.....	2	5	0	4	0	0
Lath, Dantsic .....fathom	3	0	0	5	0	0
St. Petersburg	4	0	0	5	10	0
Wainscot, Riga .....log	2	15	0	4	0	0
,, Odessa, crown.....	3	5	0	3	7	6
Deals, Finland, 2nd and 1st...std.100	7	0	0	8	0	0
,, 4th and 3rd..... ...	6	0	0	6	10	0
Riga	5	10	0	7	0	0
St. Petersburg, 1st yellow	8	10	0	14	0	0
,, 2nd ,, ...	7	0	0	8	0	0
,, white	7	0	0	10	0	0
Swedish	6	0	0	15	0	0
White Sea	7	0	0	17	10	0
Canada, Pine, 1st	17	0	0	29	0	0
,, ,, 2nd.....	11	0	0	17	0	0
,, ,, 3rd, &c.....	6	0	0	8	0	0
,, Spruce, 1st	8	0	0	11	0	0
,, ,, 3rd and 2nd	5	0	0	7	10	0
New Brunswick, &c.....	5	0	0	7	0	0
Battens, all kinds	4	0	0	12	0	0
Flooring Boards, sq. 1 in., Prepared, first	0	9	0	0	13	0
Second	0	7	6	0	8	6
Other qualities	0	5	0	0	7	0
Cedar, Cuba .....foot	0	0	3	0	0	3½
Honduras, &c.	0	0	2½	0	0	3½
Australian	0	0	2	0	0	3
Mahogany, Cuba	0	0	4	0	0	7
St. Domingo, cargo average	0	0	4	0	0	7
Mexican ,, ...	0	0	3½	0	0	4½
Tobasco ,, ...	0	0	4	0	0	6½
Honduras ,, ...	0	0	4	0	0	6½
Maple, Bird's-eye .....foot	0	0	6	0	0	8
Rose, Rio .....ton	7	0	0	10	0	0
Bahia.....	6	0	0	10	0	0
Box, Turkey .....foot	5	0	0	17	0	0
Satin, St. Domingo .....foot	0	0	6	0	0	10
Porto Rico	0	0	7	0	1	0
Walnut, Italian	0	0	4	0	0	5

METALS.	£.	s.	d.	£.	s.	d.
Iron—Pig, in Scotland .....ton	0	0	0	0	0	0
Bar, Welsh, in London	4	7	6	4	15	0
,, ,, in Wales	4	2	6	4	7	6
,, Staffordshire, London	5	10	0	6	0	0
Sheets, single, in London	6	15	0	8	10	0
Hoops ,, ...	6	0	0	7	0	0
Nail-rods ,, ...	5	15	0	6	10	0
Copper—						
British, cake and ingot .....ton	44	0	0	45	0	0
Best selected	45	10	0	46	0	0
Sheets, strong.....	51	10	0	0	0	0
,, India	49	10	0	0	0	0
Australian	0	0	0	0	0	0
Chili, bars	40	17	6	41	5	0
Yellow Metal .....lb.	0	0	4	0	0	4½
Lead—						
Pig, Spanish .....ton	12	12	6	0	0	0
English, common brands.....	12	17	6	0	0	0
Sheet, English	13	15	0	13	17	6
Spelter—						
Silesian, special .....ton	14	5	0	14	7	6
Ordinary brands.....	14	2	6	14	5	0
Tin—						
Banca .....ton	0	0	0	0	0	0
Billiton	0	0	0	0	0	0
Straits	101	10	0	0	0	0
Australian	101	15	0	0	0	0
English ingots	104	10	0	105	0	0
Zinc—						
English sheet .....ton	0	0	0	0	0	0

OILS.						
Linseed .....ton	20	5	0	20	10	0
Cocoanut, Cochin	36	0	0	0	0	0
Ceylon	26	10	0	0	0	0
Copra	0	0	0	0	0	0
Palm, Lagos	23	10	0	0	0	0
Palm-nut Kernel	0	0	0	0	0	0
Rapeseed, English pale	22	5	0	22	10	0
,, brown	20	15	0	21	0	0
Cottonseed, refined	18	15	0	19	10	0
Tallow and Oleine	25	0	0	45	0	0
Lubricating, U.S.	6	0	0	10	0	0
,, refined	8	0	0	13	0	0
Turpentine—						
American, in casks .....cwt.	1	8	0	0	0	0
Tar—						
Stockholm .....barrel	0	15	0	0	15	6
Archangel	0	10	6	0	11	0

CONTRACTS AND PUBLIC APPOINTMENTS.

Epitome of Advertisements in this Number.

CONTRACTS.

Nature of Work, or Materials.	By whom required.	Architect, Surveyor, or Engineer.	Tenders to be delivered.	Page.
Asphalting, Kerbing, &c.....	Lewisham Brd. of Wks.	*Official*	Nov. 2nd	xviii.
Paving Footpaths	Mile End Vestry	J. M. Knight	Nov. 3rd	ii.
Two Class-Rooms	Walthamstow Schl. Bd.	W. A. Longmore.....	Nov. 9th	ii.
School for Boys	do.	do.	do.	ii.
Road-Making and Paving Works	Hammersmith Vestry...	*Official*	Nov. 10th	ii.
Lamps, Columns, Frames, and Lanterns	Twickenham Local Brd.	H. M. Ramsay	Nov. 11th	ii.
Enlargement, Reading Post-Office	Com. of H.M. Works...	*Official*.....	do.	i.
Cart Shed and Lamp Store.....	Epsom Local Board.....	do.	Nov. 12th	ii.
Drainage Works, Willesden	Metropolitan Rail. Co.	O. Claude Robson	Nov. 15th	xviii.
Pumping Machinery.....	Tottenham Local Board	— De Pape	Nov. 16th	ii.
Engine-House, &c.	do.	do.	do.	ii.
Laying-out and Planting Infirmary Grounds...	St. Saviour's Union.....	Jarvis & Son	Nov. 18th	xviii.
Engine-House, Boiler-House, &c.	Met. Board of Works	*Official*	Nov. 26th	ii.
Re-seating Parish Church at Lydd		J. Oldrid Scott.....	Not stated...	ii.

PUBLIC APPOINTMENTS.

Nature of Appointment.	By whom Advertised.	Salary.	Applications to be in.	Page.
Clerk of the Works	Parish of Birmingham .	6*l.* per week	Nov. 4th	xvi.
Foreman of Sewage Works.....	Hendon Local Board ...	2*l.* do.	Nov. 10th	xvi.
Head Master	Bradford Technical Col.	200*l.*, &c.	Nov. 26th	xvi.
Deputy Inspector of Nuisances.....	Liverpool Corporation	150*l.*	Nov. 25th	xvi.

TENDERS.

BERMONDSEY.—For proposed dwellings at Bermondsey. Mr. A. E. Purdie, architect:—

Greenwood	£9,200	0	0
Staines	8,986	0	0
Higgs & Hill	8,984	0	0
Lawrence & Son	8,957	0	0
Martin	8,940	0	0
Bailey	8,854	0	0
Pain	8,745	0	0
Howell	8,472	0	0
Wall.....	8,450	0	0
Tarrant & Son	8,390	0	0
Perry & Co.	8,386	0	0
Priestly	8,350	0	0
Parnell & Son	8,258	0	0
Sabey & Son	8,100	0	0
Johnson	8,070	0	0
Jerrard	7,983	0	0
Croaker	7,570	0	0
Parker	7,560	0	0
Evans	6,890	0	0

BETHNAL-GREEN.—For the erection of a dwelling-house, shop, and warehouse in rear, 203, Green-street, Bethnal-green, for Mr. George Hughes. Mr. Chas. E. Jackson, architect, Grove-road, Bethnal-green:—

F. Higgs	£741	0	0
B. Wire	487	0	0
G. W. Beale	468	0	0
J. J. Bartram	460	0	0
C. Barnes	445	0	0
C. Everard (accepted)	429	0	0

BETHNAL-GREEN.—For additions to schools, Bethnal-green-road, for the School Board for London. Mr. T. J. Bailey, architect. Quantities by Messrs. Barber, Boxall, & Barber:—

A. M. Miller	£982	0	0
Jarvis	873	0	0
J. F. Sargeant	840	0	0
H. L. Holloway	828	0	0
Atherton & Latta.....	795	0	0
S. J. Jerrard.....	792	0	0
Cox	777	0	0
J. R. Eardox	773	11	4
J. Godfrey & Son	755	0	0
J. Holland.....	740	0	0
W. Johnson	680	0	0
Norris & Luke	644	0	0

BOURNEMOUTH.—For making roads on the Canford Cliffs Eastate, West Bournemouth, for the proprietors. Messrs. Kemp-Welch & Pinder, surveyors, Bournemouth:—

Mann & Griffiths	£317	4	9!
Saunders & White	696	12	0
J. Kingswell	536	0	0
G. Troke (accepted)	528	8	2
W. Guy	520	16	0
R. Watton	371	14	0!

BOW.—For well drainage, &c., at the Atlantic Wharf, Bow Common-lane, for the Atlantic Storage Company, Limited. Mr. W. H. Gathercole, surveyor. Quantities by Messrs. Argent & Woodward:—

H. Gale	£213	1	6
Wood Bros.	124	0	0
J. Oliver.....	92	10	0
W. Finch	72	5	8

BRIXTON.—For new shop front at 1 and 3, Dorrell-place, Brixton-road, for Mr. A. Philps. Mr. J. W. Stevens, architect and surveyor, New Bridge-street:—

W. Salter (accepted)	£110	0	0
New Corridor.			
Hill Bros., Streatham (accepted)	44	0	0

BROMLEY (Kent).—For building a wall at Beechfield, Widmore, for the Bromley Local Board. Mr. Hugh S. Cregeen, surveyor:—

H. Balding	£200	0	0
E. Peill	189	0	0
T. Lansbury	187	10	0
J. L. Woodhams (accepted).....	178	0	0

CARDIFF.—For ironfounder and plumbers' work to house at Llandaff, for Mr. John Sankey. Messrs. Halliday & Anderson, architects, Cardiff. Mr. Norman Wright, quantity surveyor, Cardiff:—

Reynolds.....	£202	2	0
John Williams & Son	197	15	0
Cross Bros.....	190	5	1
Prodger (accepted).....	190	1	9

[All of Cardiff.]

CHELSEA.—For alterations to business premises, 16 and 18, King's-road, for Messrs. Lester & Co. Mr. J. W. Stephens, architect and surveyor, New Bridge-street:—

Burton & Son	£882	0	0
Downs	763	0	0
Yardley & Son.....	722	0	0
Prestage & Co.....	699	0	0
Braid & Co. (accepted)	640	0	0
Shop Fittings.			
Sage & Co.....	380	0	0
Drew & Cadman	377	0	0
Yardley & Son	309	0	0
W. Salter (accepted)	259	0	0

CHICHESTER.—For sanitary improvements and works for the disposal of the sewage at the West Sussex, East Hants, and Chichester Infirmary. (Plumbing to be done by registered plumbers.) Mr. Mark H. Judge, architect, London:—

Graham & Fleming, Knightsbridge...	£1,666	0	0!
Shanks & Company, London.....	1,403	0	0
Winser & Company, Westminster ...	1,345	0	0
Joseph Hume, London	1,104	0	0
H. Toten & Sons, Kensington	1,080	0	0
Wm. King & Son, Pimlico	1,025	0	0
J. G. Stidder & Co., Southwark	985	0	0
John Knight, Westminster	877	0	0
Wenham & Waters, Croydon	841	0	0
H. S. Stephens, Islington	793	0	0
George Macfarlane, Queen's Park ...	747	0	0
J. C. Christie, London	715	0	0!

DARENTH (Kent).—For internal painting, and other work, at the Imbecile School for Children, at Darenth, near Dartford, Kent, for the Managers of the Metropolitan Asylum District. Messrs. A. & C. Harston, architects, Leadenhall-street. Quantities not supplied:—

H. S. Stephens	£1,917	0	0!
R. Proctor.....	1,598	0	0
Dicksee & Dicksee	1,255	0	0
A. G. Allard	1,250	0	0
G. Veale	1,193	0	0
A. Whelch	1,136	0	0
W. Hadlow.....	1,097	0	0
T. A. Bone.....	1,096	0	0
Church & Co.....	1,080	2	6
T. Bendon	975	0	0
Vigor & Co.....	965	0	0
W. G. Lilley	959	0	0
J. G. Robson.....	868	17	0
C. Willmott	834	0	0
W. Wythe	789	10	0
Seabrook & Son.....	707	0	0
W. Andrews,* East Margate	656	10	0!

* Accepted.

DOVER.—For villa residence on the Dover Castle Estate. Messrs. Cresswell & Newman, architects, Castle-street, Dover. Quantities supplied:—

W. J. Adcock	£1,480	0	0
H. Stiff	1,400	0	0
H. Richardson	1,380	0	0
Austin & Lewis	1,353	0	0
W. H. Dawes.....	1,330	0	0

EGHAM.—For new wing to mansion, Milton Park, Egham, for the Baron De Worms. Mr. D. R. Dale, architect, Union-court, Old Broad-street:—

J. Hoare & Son, London (accepted) *	£4,500	0	0

[No competition.]

* Including the materials on site.

HAMPSTEAD.—For new club-house, Kingsgate-road, West Hampstead, for the Trustees of the Kilburn and West Hampstead Constitutional Club. Mr. W. J. Mickleton, architect. Quantities by Messrs. Leete, Arundell, & Tarte:—

C. H. Cole	£2,618	0	0
Neave & Neave.....	2,590	0	0
Patman & Fotheringham	2,576	0	0
S. J. Dainton.....	2,450	0	0
Mark Manley	2,427	0	0
J. M. Goodwin.....	2,394	0	0
J. Allen & Sons.....	2,350	0	0
G. & J. Green	2,348	0	0

KILBURN.—For laundry and baths at Palmerston-road, Kilburn, for the Trustees of the Wells and Campden Charity. Mr. Henry S. Legg, architect, Christ's Hospital:—

Manley	£2,567	0	0
Gould & Brand	2,449	0	0
Watts	2,285	0	0
Burford & Son	2,248	0	0
Hackworth.....	2,235	0	0
Allen & Son	2,145	0	0
Engineer's Work.			
W. Fraser & Co.	1,491	0	0
Berry & Co.	1,375	0	0
Bradford & Co.....	1,313	0	0

LEYTONSTONE (Essex).—For the erection of five dwelling-houses at Cobbold-road, Cann Hall-road, for Mr. Thomas Burrows, of Beulah Villa, Woodford. Mr. W. C. Livermore, architect and surveyor:—

A. Nicholls, Harrow-road	£950 0 0

LONDON.—For works required in the erection of premises in Fenchurch and Gracechurch streets. Mr. J. S. Edmeston, architect. Mr. C. N. W. Brooks, surveyor:—

Patman & Fotheringham	£31,159 0 0
Patrick & Son	30,819 0 0
Colls & Son	30,695 0 0
T. Boyce	30,660 0 0
Higgs & Hill	29,800 0 0
Holland & Hannen	29,607 0 0
E. Conder	29,540 0 0
Mowlem & Co.	29,479 0 0
Peto Bros.	29,305 0 0
Nightingale	28,919 0 0
Kynoch	28,735 0 0
Howell & Son	28,569 0 0
Woodward	28,479 0 0
Lawrence & Sons	28,302 0 0
J. T. Chappell	28,140 0 0
Bywaters	27,873 0 0
W. Sheppard	27,465 0 0

LONDON.—For the erection of the Ship Tavern, 18A, Upper Marylebone-street, and the house adjoining, 23, Saville-street, W., for Mr. James Pryer. Mr. Alfred J. Hopkins, architect, Mortimer-street. Quantities by the architect:—

Ashwell	£4,457 0 0
J. T. Chappell	4,238 0 0
Mattock Bros.	4,159 0 0
Scott	4,147 0 0
Fairchild & Co.	4,089 0 0
Adams	3,997 0 0
Toms	3,939 0 0
Marks	3,870 0 0
Beale	3,450 0 0

LONDON.—For sundry alterations and repairs, new bar fittings, &c., at 10, Pentonville-road, for Mr. C. Pasbach:—

S. S. Hardwick	£398 10 0
C. Dearing & Son	375 0 0
Heath & Quincey	354 0 0
Sabaw, Rubens, & Co. (accepted)	275 0 0

LONDON.—For building new warehouses in Gray's Inn-road, for Mr. S. Trenner. Quantities by Mr. F. Thomson. Mr. H. I. Newton, architect, Queen Anne's-gate, Westminster:—

F. Marks	£4,909 0 0
W. J. Smith	4,550 0 0
Prestage & Co.	4,470 0 0
Lamble	4,467 0 0
Sabey & Son	4,456 0 0
Perry & Co.	4,449 0 0
Killby & Gayford	4,424 0 0
Grover & Sons	4,288 0 0
S. Godden	4,265 0 0
J. L. Green	4,252 0 0
H. Burman & Sons	4,227 0 0
Jackson & Todd	4,195 0 0

LONDON.—For rebuilding the Rose and Crown public-house, Collingwood-street, Blackfriars-road, S.E., for Mr. E. W. Cathie. Mr. W. W. Gwyther, architect, Lincoln's Inn-fields. Quantities by Mr. J. W. Stevens, New Bridge-street:—

Ashby & Horner	£2,794 0 0
Patrick	2,668 0 0
Nightingale	2,580 0 0
A. B. Clark	2,480 0 0
Worsley	2,410 0 0
Prestage & Co.	2,342 0 0
Killby & Gayford	2,340 0 0
Oldrey & Co.	2,097 0 0

LONDON.—For sundry works in paving court-yard, excavating for and erecting urinals, &c., at 59, Eastcheap, for Mr. Thos. Adams. Messrs. Drury & Lovejoy, architects:—

	Paving.	W.C.'s
Clarke & Bracey	£133 0 0	£364 0 0
Williams & Son	139 0 0	315 0 0
Ashby Bros.	124 0 0	285 0 0

ROMFORD (Essex).—For forming new road, for the Rev. H. A. Goodwin. Mr. Henry B. Michell, surveyor:—

Wilson, Walthamstow	£420 0 0
Jackson, Leyton	418 0 0
Peill, Bromley, Kent	405 0 0
Pizzey, Hornsey (accepted)	397 10 0

SOUTHEND.—For additions to the Alexandra Yacht Club, Southend. Mr. H. J. Wood, architect:—

Darke & Son, Southend	£135 0 0
Baker & Wiseman,* Southend	122 18 0

* Accepted.

SUTTON SCOTNEY (Hants).—For the erection of a new house, with stabling, for Mrs. W. Smallpeice. Messrs. H. E. Raynbird & Sons, architects, Basingstoke. Quantities supplied:—

J. Thurnwood, Basingstoke	£1,261 5 0
Carter & Son, Winchester	1,186 0 0
Pike Bros., Basingstoke	1,093 10 0
W. Wilkes, Basingstoke	1,090 0 0
Grace, Winchester	1,062 17 6
J. A. Sims, Basingstoke (accepted)	973 0 0

WATFORD.—For stables at Croxley Mills, near Watford, Herts, for Messrs. Dickenson & Co., Limited. Mr. G. Hubbard, architect. Quantities by Mr. J. Sargeant:—

	A	B
Chappell	£1,368 0 0	£1,366 0 0
Macey	1,353 0 0	1,353 0 0
Maskin	1,277 0 0	1,290 0 0
A. & B. Hanson	1,277 0 0	1,289 0 0
Waterman	1,243 0 0	1,241 0 0
Clifford & Goff	1,210 0 0	1,214 0 0
	A Roof tiled.	B Roof slated.

SPECIAL NOTICE.—Lists of Tenders frequently reach us too late for insertion. They should be delivered at our office, 46, Catherine-street, W.C., *not later than Four p.m.* on THURSDAYS.

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Registered Telegraphic Address, "THE BUILDER, LONDON."

Ventnor (below our mark).—H. & Co.—A. B.—W. G.—S. & Co.—F. E. T. (while assenting to many of the opinions expressed in your letter, we regret that it is not in a style suitable for our columns).—F. C. H. (results should have been forwarded to us in the first instance, if publication in our columns was desired. We cannot give space for them second-hand).—F. S.—L. & B.—J. H. (we cannot publish your letter).—H. & Co. (we do not publish accepted tenders unless the amounts are given).—F. N.—J. W. (not suitable for our columns).—M. J. A.—H. G. (thanks).—H. H. B. (amount should be given).

All statements of facts, lists of tenders, &c., must be accompanied by the name and address of the sender, not necessarily for publication.

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Addressed to No. 46, Catherine-street, W.C.

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